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# Psychological and Cultural Determinants of Women's Intentions to Donate Oocytes

A thesis submitted to Middlesex University in partial fulfilment of the  
requirements for the degree of Doctor of Philosophy.

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## **Abstract**

In oocyte donation, oocytes from one woman can be transferred to another for fertility treatment or used for medical research. However, there is an acute shortage of women from the general population donating their oocytes and this has adverse consequences for infertile patients and medical researchers. The aims of this thesis were to explore the psychological determinants of oocyte donation intentions and to investigate the link between oocyte donation intentions and parenthood using components of the Theory of Planned Behaviour (TPB) among women from different ethnic backgrounds. In doing so, a triangulation approach was adopted and one systematic review and five empirical investigations consisting of quantitative, qualitative and experimental research methodologies were carried out. Results revealed that oocyte donation is best accounted for by a diverse dimension of factors, which include positive attitudes towards oocyte donation, unconventional perceptions of parenthood and demographic variables. Some theoretical components of the TPB were supported; in particular Structural Equation Modelling found positive attitudes towards oocyte donation and subjective norms demonstrated a direct influence on the decision to donate oocytes. However, the role of perceived behavioural control in intentions to donate remains uncertain. Perceptions of the importance of parenthood and genetic ties between parent and child are key in determining [un]willingness to donate oocytes for fertility treatment. In addition, findings from this thesis suggest that it may be possible to modify intentions towards oocyte donation using the Framing Effect among White women, but not Women from South East Asia. The results of this thesis have some important implications for research and clinical practice, particularly in its potential to tailor clinical service provision regarding the recruitment of oocyte donors.

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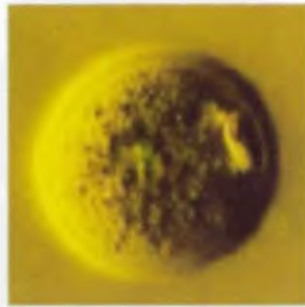
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## **1. Introduction**



**Figure 1.1.1: A picture of an oocyte**

### **1.1 General introduction to thesis**

Oocyte donation is a topical area of research that has important policy, clinical and research implications. Traditionally, oocyte donation referred to the transfer of oocytes from a donor to a recipient mother. However, within this last decade, there have been some controversial and high profiled changes to UK legislation, which has transformed oocyte donation practice. First, in 1998, the Human Fertilisation Embryology Authority (HFEA), which is a statutory voluntary body in the UK which regulates the use of gametes and embryos in fertility treatment and research (Human Fertilisation and Embryology, HFE Act, Section 8-10), permitted the exercise of the oocyte share model (HFE Act Section 12(e); HFEA, 1998a; HFEA, 2008a, Code of Practice – Section G4), which allows infertile patients to donate a proportion of their oocytes for subsidised fertility treatment. Second, in 2006, donor anonymity was abolished (HFE Act, Section 33A(2h); HFEA, 2008a, Code of Practice – Section G5). Finally, last year in 2007, the HFEA permitted oocyte donation for research within the existing oocyte share model or voluntarily donation (HFE Act, Schedule 3, 5(1); HFEA, 2007a; HFEA, 2008a, Code of Practice – Section G8). These changes to legislation have attracted immense media coverage. For example, the BBC website has over a hundred news articles dedicated to oocyte donation. The media



recognises that oocyte donation is a newsworthy subject and that these legislations have an impact on every woman in the UK and not just the women seeking fertility treatment. These legislations regulate parts of women's bodies and set restrictions on who can donate (women under the ages of 35 years old, who are healthy and psychologically well-adjusted); how they donate (as an identifiable donor who has no control over disclosure decisions to the child); and to whom they donate (for fertility treatment or medical research). Another area of interest to journalists (e.g. Batty, 2008), policy makers, researchers and clinicians has been the acute shortage of women across the world donating their oocytes (Blyth and Frith, 2008). The scarcity of donors was (and still remains) such a concern for clinicians, policy makers and infertile patients in the UK that there was therefore great scope to research the psychological aspects of oocyte donation and understand the attitudes of women from the general population towards oocyte donation.

Oocyte donation, like other health behaviours, takes place in a socio-cultural framework. Therefore, there are important social, cognitive and behavioural factors that interact with the oocyte donation decision making process. Psychological research is therefore key in understanding the processes and mechanisms which influence attitudes towards oocyte donation and could be valuable in determining women's [un]willingness towards oocyte donation. Psychological studies into health behaviours have often used health theories, because they are believed to be useful in understanding the psychological and social factors determining a behaviour and in promoting behavioural change (Pinto and Floyd, 2008). However, van den Akker (2006) found there is a dearth of psychological theory applied to oocyte donation research. This thesis therefore applied a health model and assessed the contribution of psychological, cultural and demographic variables to the motivation of oocyte donation. The application of a health model to oocyte donation would be of intrinsic interest to an academic community because of its investigation of the

interaction between biological and socio-psychological variables. Further, the advantages of conducting theory based research are that the findings can be readily translated into practical strategies and viable implementations. Thus, there is potential for tailoring clinical service provision regarding recruitment in an attempt to address the shortage of oocyte donors. Research into the attitudes of women from the general population is important for policy makers too and provides them with accessible and validated information on the current trends and important issues relating to a behaviour they govern.

This thesis therefore examined women's attitudes and intentions towards oocyte donation. In doing so, it adopted a Theory of Planned Behaviour (TPB) approach to underpin its theory (chapter 1) and methodology (chapter 3). This study incorporated a multi-paradigm (idiographic and nomothetic) triangulation approach, which incorporated quantitative, qualitative and experimental methods to investigate women's attitudes towards oocyte donation and their reasons for parenthood. Specifically, there were two questionnaire studies which investigated attitudes and intentions towards oocyte donation for treatment (Chapter 5) and research (Chapter 6), examined the link between oocyte donation and parenthood and tested the application of components of the TPB model to oocyte donation. The Interpretative Phenomenological Analysis (IPA) approach provided the theoretical framework for two qualitative studies which examined the meaning of parenthood (Chapter 4) and perceptions of oocytes and oocyte donation (Chapter 7), respectively. Additionally, the experimental study tested the utility of message framing (based upon the Prospect Theory) in changing intentions towards oocyte donation (Chapter 8). Additionally, a systematic review was also carried out on the research literature on the motivations and experiences of oocyte donors and the research synthesis was used to inform this thesis and interpret the research data (chapter 2). In this chapter, a critical literature review of the research evidence on oocyte donation for treatment and research

will be discussed alongside a critical appraisal of the TPB, IPA and framing effect (1.2). Finally, the research problem and aims and objectives of the thesis will be presented (1.3). Chapter 9 provides the general discussion of the thesis.

## **1.2. Literature Review**

The literature review presented in this chapter has five main components. First, a description of oocyte donation (1.2.1), summary of the medical procedures involved in oocyte donation (1.2.1.1) and classifications of the four types of oocyte donors (1.2.1.2) will be provided. Then, a general world perspective on legislation regarding the use of oocyte donation (1.2.1.3) will be offered. Information on the acute shortage of oocyte donors (1.2.1.4) and the implications of this shortage on infertile patients and policy (1.2.1.5) will also be presented. This background information is designed to highlight the context in which women donate their oocytes in the UK and define some key terms that will be used throughout the thesis. Second, psychological research that has examined volunteer oocyte donor's attitudes towards various aspects of oocyte donation will be discussed, particularly regarding the link between the perceived importance of parent/motherhood and oocyte donation (1.2.2). This section provides the background needed for evaluation of the research purpose. The section will only review selected and highly relevant research data because Chapter 2 is a systematic review dedicated to the research syntheses of various aspects of oocyte donation. Third, a critical review presenting the literature on motherhood (1.2.3) and fourth, the reasons for parenthood (1.2.4) will be presented on the most substantiated theories and studies that are relevant to this research project. The fifth section will discuss oocyte donation for research and describe some studies on embryo donation for research (1.2.5). The reason for considering embryo donation for research is because there is a lack of empirical work on oocyte

donation for research and embryo donation is the closest alternative that could provide important information on factors that determine and influence the decision to donate genetic materials to research. The sixth section (1.2.6) will critically appraise and justify the inclusion of the theoretical models that underpin this thesis, specifically, the Theory of Planned Behaviour (1.2.6.1); Interpretative Phenomenological Analyses (1.2.6.2) and the Prospect Theory (1.2.6.3). The last section in this chapter outlines the research problems and aims (1.3). The literature review and this thesis generally will not consider the research evidence regarding semen donation. This is because there are some fundamental differences between donating oocytes and donating semen, specifically (but not exclusively) relating to the medical procedure involved, motivations behind donation and attitudes towards semen/semen donation and oocytes/oocyte donation (Bolton, Golombok, Cook, Bish and Rust, 1991; Schover, Rothermann and Collins, 1992; Braverman, 1993; Haimes, 1993; Golombok, Murray, Brinsden and Abdalla, 1999; Murray and Golombok, 2000; Murdoch, 2001; Baykal, Korkmaz, Ceyhan, Goktolga and Baser, 2008). Therefore, comparisons may be misleading and do injustice to both donation types.

### **1.2.1 Oocyte donation**

The majority of women from Western countries are mothers (Joshi, 2008) and the majority of these women are biologically and genetically related to their children. However, approximately one in seven couples will at some time in their lives experience difficulties in conceiving. Infertility is defined as the inability to conceive after two years of unprotected sexual intercourse (World Health Organisation, 1975, 2001) however, clinical studies have often used a one year period (Rutstein and Shah, 2004). Recently it has been found that 2.4% of British women aged between 40-55 years reported involuntary childlessness and approximately 18% of these women had at some time in their life

consulted a doctor about their fertility problem (Oakley, Doyle and Maconochie, 2008). For some women, the inability to conceive is a tragedy (Kainz, 2001; Rutstein and Shah, 2004) and The World Health Organisation (WHO) has defined infertility as a disease, and it is a fundamental human right to receive treatment for a disease (van den Eede, 1995). Consequently, there are approximately 30,000 people having fertility treatment each year in the UK (HFEA, 2008b). Further, fertility treatment is not only restricted to the infertile because the traditional family unit in Western countries is also undergoing revolutionary change. Many non-traditional family units such as single, lesbian and gay families are also seeking reproductive services to achieve a family (Klump, Licciardi, Krey, Noyes, Grifo and Berkeley, 2003; Woodward and Norton, 2006).

One of the treatment methods used to treat infertility is oocyte donation, which involves a third party – donated oocytes from another woman. Oocyte donation is used to treat women who are unable to conceive using their own oocytes. The medical conditions preventing women from using their own oocytes include ovarian failure; surgical castration; repetitive IVF failure; inheritable diseases; and menopause (Cameron, Rogers, Caro, Harman, Healy and Leeton, 1989; Klein and Sauer, 2002; Söderström-Anttila, 2001; Söderström-Anttila, Foudila and Hovatta, 2001a; Shulman, Frenkel, Dor, Levran, Shiff and Maschiach, 1999). Oocyte donation allows these women the opportunity to experience biological motherhood without genetic connectedness. The first pregnancy achieved through oocyte donation was in 1983 (Trounson, Leeton, Besanko, Wood and Conti, 1983) and the first successful live birth was in 1984 (Lutjen, Trounson, Leeton, Findlay, Wood and Renon, 1984). Since then, thousands of children have been conceived through oocyte donation. For example, it was estimated that 2700 pregnancies were achieved after oocyte donation in Europe during 2003 and 497 live births were delivered in the UK (Nyboe-Andersen, Goossens, Gianaroli, Felberbaum, de Mouzon, and Nygren, 2007). In addition

to medical demands, technological and social changes such as the prolongation of human life, delay of child bearing, rising incidences of divorce and increases in the overt formation of alternative families (e.g. step families, single parent and lesbian families) has increased the demand for donated oocytes further (Sauer, Paulson and Lobo, 1992, 1993, 1996; Tarlatzis and Pados, 2000; Sauer and Kavic, 2006). It was through an acknowledgement of these multiple influences and contributing concerns that the programme of studies for this thesis were planned and designed. Further, although technological advancements in medicine has changed social structure and significantly improved the sophistication of fertility treatment, oocyte donation remains a potentially risky medical procedure and the treatment using oocyte donation therefore is described in the section below.

#### ***1.2.1.1 Treatment using oocyte donation***

Technically, the success rate of oocyte donation is quite high (Remohí, Gartner, Gallardo, Yalil, Simón and Pellicer, 1997; Soderstrom-Anttila, Sajaniemi, Tiitinen and Hovatta, 1998; Tarlatzis and Pados, 2000; Söderström-Anttila *et al.*, 2001a; Sauer and Kavic, 2006), however, oocyte donation is an invasive medical procedure and there are potential health risks involved for the oocyte donors. Essentially, oocyte donors have to go through the same procedure as infertile patients undergoing in vitro fertilisation (IVF) (Pennings, 2007). First, donors are usually screened for sexually transmitted and inheritable diseases (ESHRE Task Force on Ethics and Law, 2002). If tests are negative then donors undergo ovarian stimulation with drugs and donor's and recipient's menstrual cycles are synchronised, often using oral contraceptives. Once an adequate number of oocytes have matured, oocytes are retrieved using laparoscopy (puncture technique under general anesthesia) or more commonly through ultrasound (needle guided by ultrasound) where

local or mild anesthesia can be administered (Cameron *et al.*, 1989; Söderström-Anttila *et al.*, 2001a; Klein and Sauer, 2002; Sauer and Kavie, 2006). The oocyte donation process also requires enormous time and commitments from the donor. For example, after the initial history and physical examination, the donors are subjected to the daily injections and regular visits to the clinics for blood tests and scans and are instructed to change several aspects of their life style, such as to avoid sexual intercourse (Sauer and Kavie, 2006).

Although rare, possible side effects for oocyte donors include Ovarian Hyperstimulation Syndrome (OHSS), vaginal bleeding and infertility (Ahuja and Simons, 1996). Sauer (2001) reviewed 1000 cycles and found only seven donors (0.7%) experienced any serious adverse effect from donating their oocytes. However, these results are misleading and contradict with other findings. For example, recent figures from the British Fertility Society (BFS, 2005) broke down the potential risks that women could experience through donating their oocytes and illustrated a different picture. The BFS reported that up to 5% of women will experience mild to moderate forms of OHSS after IVF treatment (these figures include all women undergoing IVF, including oocyte donors) and severe cases will occur around 0.5 to 1% of the times. Around 1 in 10,000 women will report serious complications after receiving general anaesthetic or intravenous sedation. Approximately 1 in 2500 will report significant haemorrhage and 1 in 500 will develop a pelvic infection after oocyte retrieval. In actual figures, Nyboe-Andersen *et al.* (2007) found that nearly 2646 European women undergoing IVF (including oocyte donors) reported OHSS in 2003. Overall, data appears to suggest that although the success rates for recipients may be relatively good and oocyte donation is a generally safe medical procedure, there remain some potential health risks which must not be ignored or underestimated. One of the reasons why success rates are relatively high for recipients is because oocytes are retrieved from women who are young and healthy (Gleicher, Weghofer and Barad, 2006). The next

section will describe some of the requirements set for oocyte donors and the four types of donors that exist.

#### ***1.2.1.2 Oocyte Donors***

In practice, any child conceived through oocyte donation would be genetically related to the oocyte donor; however the donor would have no legal or financial responsibility towards the offspring(s) (HFE Act, Section 47). In the UK, oocyte donors are required to be young women (usually under the age of 35), healthy, non-smoking and without any infectious diseases or heritable conditions (HFEA Code of Practice – Section G4, 2008a; National Gamete Donation Trust, NGDT, 2008), and these requirements are similar for other countries in Europe and the US (Cohen, Lindheim and Sauer, 1999; Sauer, Ary and Paulson, 1994; Söderström-Anttila, 2001; Klein and Sauer, 2002; Garrido, Zuzuarregui, Meseguer, Simón, Remohí and Pellicer, 2002). There are two distinct groups of oocyte donors, patients and non-patients and there are three different subtypes of non-patients which will be referred to as; volunteer donors; known donors; and commercial donors. Patient donors are infertile patients undergoing IVF who enter an agreement with their infertility clinic to donate a proportion of their oocytes for the treatment of others to receive subsidised infertility treatment. Whereas, volunteer donors are women who voluntarily donate their oocytes without receiving any payment. In the European research literature they are typically referred to as anonymous donors, however as anonymity has been abolished they will be referred to as 'volunteer donors'. Known donors are women who have a relationship with, or is known to, their recipient prior to the donation. Finally, commercial donors are women who donate their oocytes anonymously for monetary compensation. In countries such as American, donors can receive up to \$10000 for each donation cycle (Sauer, 1996; Klein and Sauer, 2002). With the exception of known donors,



donors would be matched to the recipient couple according to phenotypic characteristics such as height and complexion (Lindheim, Frumovitz and Sauer, 1998; Klein and Sauer, 2002; NGDT, 2008).

Commercial donor practices are not legally sanctioned in the UK, patient donors donate their oocytes in return for subsidised fertility treatment and known donors tend to be recruited by infertile patients; the focus of this thesis is therefore on volunteer donors. Volunteer donors make up an unusual population because they donate their genetic material to infertile patients who are unknown to them. Volunteer donors undergo relatively arduous and complicated medical procedures at a certain risk to their own health and last, but not least, they face the prospect of being approached 18 years later by their genetic but not gestational or social offspring. Thus, volunteer donors are of intrinsic research interest. The next sections will draw attention to global and UK legislation pertaining to oocyte donation, which have been briefly mentioned in this paragraph, in more detail.

### ***1.2.1.3 Legislation***

Oocyte donation is authorised by statutory law. Consequently, oocyte donation practice varies from country to country and is dependent on the religious and cultural identities of individual countries. For example, oocyte donation is not allowed in Germany, Italy, Norway, Switzerland, Tunisia, and Turkey (American Society for Reproductive Medicine, ASRM, 2007a). Some Islamic countries also do not permit gamete donation because third party conception is forbidden by Islamic Law (Inhorn, 2006). Sweden, Spain, Greece, France, India, the United States and the UK do however permit oocyte donation (ASRM, 2007a). In Israel and Denmark, they have set tight restrictions on oocyte donation practice

and oocyte sharing is the only type of donation permitted (Ahuja and Simons, 1996; Söderström-Anttila *et al.*, 2001a; Rabinerson, Dekel, Orvieto, Feldberg, Simon and Kaplan, 2002; Klein and Sauer, 2002). Oocyte sharing is also practiced in countries such as the UK, Australia, Spain, Greece, and the US (HFEA, 1998a; Ahuja, Simons, Mostyn and Bowen-Simpkins, 1998). Sweden, the Netherlands, Austria, Switzerland, Norway, New Zealand, Australia and the UK only permit identifiable donors to be recruited (Frith, 2001; Daniels, 2007; Frith and Blyth, 2007; HFEA, 2008a). Whereas, commercial donation is prohibited in the UK (HFE Act, Section 12e), Canada, Norway, Sweden, France and Spain (Söderström-Anttila *et al.*, 2001a; Sauer and Kavic, 2006). The European Society of Human Reproduction and Embryology (ESHRE, Task Force on Ethics and Law, 2002) asserted that on principle no financial payment should be made to donors. The US on the other hand, does provide monetary payment to compensate for the time inconvenience and physical and emotional hardship associated with oocyte donation (ASRM, 2004, 2007b). Recent changes to UK legislation have also meant that oocyte donation for research is also permitted (HFE Act, Schedule 3, 5(1); HFEA, 2007a; HFEA, 2008a, Code of Practice – Section G8). Thus, there is great variation in oocyte donation practices across countries to countries, and this will have an inevitable impact on the research questions asked and create some divergences within the oocyte donation literature. This will be discussed in more detail in the systematic review in chapter 2. To sum, despite progressive legislation in certain countries including the UK allowing for oocyte donation, there is an acute shortage of donated oocytes. Data on the scarcity of oocyte donors and the implications of this shortage will be discussed in the next two sections.

#### ***1.2.1.4 Shortage of oocyte donors***

There is an acute shortage of donated oocytes in the UK (Ahuja and Simons, 1996; HFEA, 1998b, 2006) and globally (Englert, Rodesch, van den Bergh and Bertrand, 1996; Blyth and Frith, 2008). Murray and Golombok (2000) surveyed 55 UK licensed clinics that recruited oocyte donors and found that 77% of clinics reported difficulties in obtaining a sufficient supply of oocytes in the past year. Specifically, many clinics reported great difficulties in recruiting Asian donors. It was reported that 62% of clinics had difficulties in recruiting Indian donors, 49% for Pakistani, 42% for Bangladeshi and 15% of clinics had difficulties in recruiting South East Asian oocyte donors. Murray and Golombok estimated that 440 patients from ethnic minority groups were on the waiting list for long periods of time because of the unavailability of oocytes of people from non-White ethnic backgrounds. Further, the numbers of oocyte donors have been declining over the past decade. For example, there were 1242 oocyte donors (including volunteer, known and patient donors) in the UK during 2000, whereas in 2006 the number had dropped to 812 (HFEA, 2007b) (See Fig 1.2.1 for a graphical display of the drop in the number of oocyte donors since 2000) in the UK.

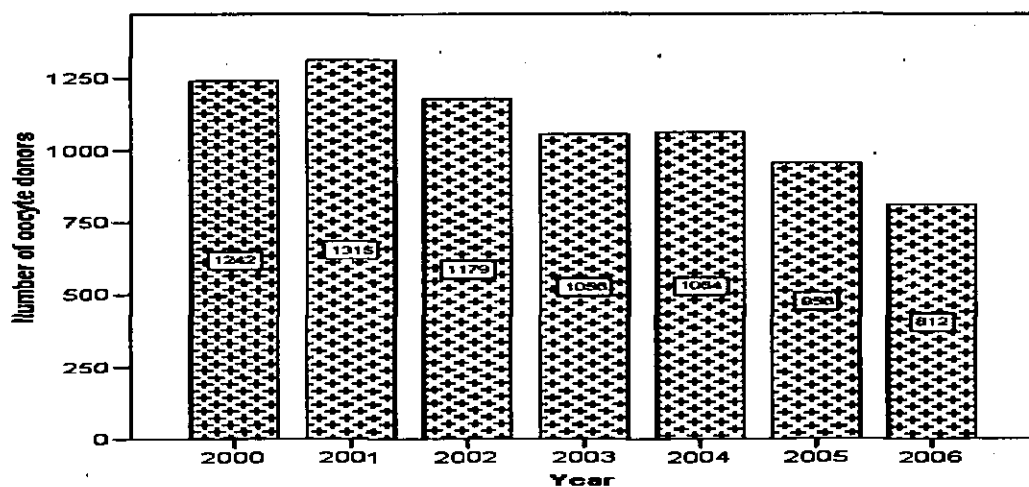


Figure 1.2.1: Figures obtained from HFEA (2007b)

### ***1.2.1.5 Implications of the oocyte donor shortage***

The short supply of donors could have some serious consequences for infertile patients. For example, there could be an increased cost in recruiting donors which the patients will have to carry; a reduction of choice for infertile patients and the possibility that patients may be reduced to select donors with less desirable characteristics (Pennings, 2001) and an increase in reproductive tourism<sup>1</sup> (Blyth and Frith, 2005; Blyth, 2006; Heng, 2006; Hemberger, Hazekamp and Hardarson, 2007; ESHRE, Task Force on Ethics and Law, 2008). The shortage of donors has also meant patients themselves have had to become oocyte donors through the oocyte share model (Ahuja and Simons, 1996; Ahuja *et al.*, 1998; Ahuja, Simons and Edwards, 1999) or patients have had to recruit their own donors from their social network. However, according to the HFEA (1998b), oocyte donation should be a *gift*, which is *voluntarily* given and without any *financial payment*. Although, patient donors do not receive momentary payment for donating, they do receive advantages in terms of speedy treatment or free or heavily subsidised fertility treatment (Blyth, Crawshaw and Daniels, 2004; Englert, Serena, Philippe, Fabienne, Chantel and Anne, 2004; Blyth and Berenice, 2008). Pennings (2007) suggested oocyte sharing does jeopardise voluntariness because if oocyte sharing is the only way to continue with fertility treatment, then this offer comes close to 'coercion'. He also raised some doubts whether known donation is fully voluntary, and highlighted the fact that people have 'obligations towards intimate friends and relatives' (pp 190) and known donors might feel morally obliged to donate. A recent study on gynaecologists and obstetricians in Sweden also found that most clinicians prefer volunteer donation to known donation (Skoog-Svanberg, Sydsjo, Ekholm-Selling and Lampic, 2008). The only group of donors which meet all

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<sup>1</sup> Reproductive tourism refers to patient travelling to other countries for fertility treatments to bypass their own home country's legislation or/and to obtain cheaper or easier to access treatment.

HFEA's requirements of altruism and voluntariness are volunteer donors. Volunteer donors donate altruistically for no financial payment and have no social obligations or financial necessities which compel them to donate.

There is a need therefore to recruit more volunteer donors for oocyte donation for treatment and research and understand the reasons behind the scarcity of donors, which this thesis has set out to do. The removal of donor anonymity has been criticised by many fertility clinicians (Craft, Flyckt, Heeley, Layland, Thornhill and Kelada, 2005), researchers (Pennings, 2005) and professional organisations such as the British Fertility Society (British Fertility Society Press Release, 2004). Pennings (2005) argued that the abolishment of donor anonymity in some European countries could reduce the number of available donors for treatment by up to 80%, and there is some empirical support for these assertions among oocyte and sperm donors (e.g. Robinson, Forman, Clark, Egan, Chapman and Barlow, 1991; Cook and Golombok, 1995). Further, many recipient parents prefer donor anonymity (Snowdon and Snowdon, 1998; Klock and Greenfeld, 2004), but not always (Pettee and Weckstein, 1993). However, Blyth and Frith (2008) refuted the suggestion that the decline in donor availability is due to the abolishment of donor anonymity and as can be seen from Fig 1.2.1, the decline in donor numbers began before 2005, when legislation removing donor anonymity was first introduced. There are likely to be a number of reasons which account for the decline in oocyte donors. Included in these reasons might be social and individual attitudes towards oocyte donation, which underpin women's decisions to donate their oocytes, and these are investigated in this thesis. The following section will review a select number of 'key' research evidence on social and individual attitudes relating to oocyte donation in an attempt to provide an informed platform to understand the research context of this thesis. This is because chapter 2

provides a comprehensive review of attitudes, motivations and donation experiences of patients and non-patients donors and will cover many of these areas in more detail.

### **1.2.2 Attitudes towards voluntary donation of oocytes for treatment**

To address the general shortage of volunteer oocyte donors for treatment, a few studies have examined various factors that may influence women from the general population's decisions to donate. For example, Lessor, Reitz, Balmaeeda and Asch (1990) conducted structured telephone interviews with 501 men and women from the general populations in the US and found that the majority were aware of oocyte donation and had favourable attitudes towards donating oocytes. However, men had more positive attitudes towards oocyte donation, were more accepting of the medical procedure involved in donation and more favourable towards oocyte donation by a sister than women. A male genetic line of descent is maintained through oocyte donation and this may have coloured men's acceptability of oocyte donation. It is possible that men may be less accepting of sperm donation (because their genetic lineage is not maintained) and indeed past research has found that. For example, Kazem, Thompson, Hamilton and Templeton (1995) surveyed fertile and infertile populations in the UK. They found women and men (irrespective of their fertility status) were more accepting of oocyte donation than sperm donation and this probably represents our patriarchal society where men's lineage is deemed more important. Kazem *et al.* also found that fertile populations were generally less aware of oocyte donation and were less willing to donate or receive donated oocytes compared to patient populations. It is possible that differences in subjective experiences may explain these results. For example, infertile couples whose ability to conceive is challenged and opportunities may be limited, may have to face a reality where they need to consider and accept a non- or partial genetically related child. Whereas, fertile populations are not faced

with these dilemmas and can continue to report a preference for genetically related children. However, it is important to note that the fertile population in Kazem *et al.*'s study were recruited from an antenatal and postnatal clinic. There is a possibility that this sample may have reported elevated levels of perceived importance of genetic ties (because they are soon to have or have had a genetically related child), these results are however consistent with the other literatures, which have found infertility experiences change perceptions of the importance of genetic ties (e.g. Strathern, 2002; van den Akker, 2000, 2001a, 2001b, 2003, 2005, 2007). Nevertheless, there is evidence to suggest that most people, including fertile and infertile have limited understanding regarding the genetic make-up of a child conceived using oocyte donation (Urdapilleta, Chillik and Fernández, 2001), thus any results pertaining to genetical matters should be interpreted with some caution. The lack of genetic understanding also raises significant ethical issues for fertility clinics and highlights the clinics responsibility to ensure donors are fully informed and have an adequate understanding of genetics before donation.

Skoog-Svanberg, Lampic, Bergh and Lundkvist (2003a) also examined the willingness of 729 Swedish women from the general population to donate their genetic material, using the Theory of Planned Behaviour (TPB) (discussed in more detail in section 1.2.6.1). Skoog-Svanberg *et al.* were the first team of investigators to apply a health psychological model to oocyte donation. They found that 17% of their sample of childbearing women was willing to donate, 39% were unwilling and 44% were unsure. Women who were willing to donate were less likely to believe in the importance of a genetic tie between parent and child. These results concur with studies with actual oocyte donors, which have reported donors consistently minimise the importance of genetic ties between parent and child (e.g. Weil, Cornet, Sibony, Mandelbaum and Salat-Baroux, 1994; Ahuja, Simons, Mostyn and Bowne-Simpkins, 1998; Beatens, Devroey, Camus, van Steirteghem and Ponjaert-

Kristoffersen, 2000; Byrd, Sidebotham and Lieberman, 2002; Kirkman, 2003; Winter and Daniluk, 2004). Skoog-Svanberg *et al.* also found that the TPB successfully differentiated between women who were willing, unsure and unwilling to donate. So, women who were willing to donate had significantly more positive attitudes towards oocyte donation, perceived the consequences of oocyte donation more favourably and reported higher levels of subjective norms and perceived behavioural control than women who were unwilling or unsure. Furthermore, almost all of the women who were willing to donate indicated they would be happy about helping another couple and many of these women had donated blood in the past. Consequently, Skoog-Svanberg *et al.* (2003) suggested there may be altruistic motives for donation. Brett, Sacranie, Thomas and Rajkhowa (2008) had also questioned a small sample of 143 women and found that awareness of oocyte donation was significantly associated with carrying a donor card, but carrying a donor card did not influence intentions to donate oocytes. However, Brett *et al.*'s study consisted of a hospital based sample and it is possible their sample was more inclined towards having a greater awareness of oocyte donation and the importance of being a donor than the general population. There were some limitations with Skoog-Svanberg *et al.*'s study too because their data analysis was limited to basic non-parametric univariate tests. They only compared group differences and conducted no inferential tests or tested whether any components of the TPB, attitudes or socio-demographic factors predicted oocyte donation intentions, even though they had data which could have lent itself to inferential analyses. This thesis therefore set out to replicate Skoog-Svanberg *et al.*'s study in the UK using the same instrument but conducting more advanced statistical analyses and examining whether factors such as socio-demographic variables, attitudes and perceptions of the importance of genetic ties and parenthood, and components of the TPB predict oocyte donation intentions using structural equation modelling (SEM). This thesis will also build on previous work



from Purewal and van den Akker (2006)<sup>2</sup> (described below) who used Skoog-Svanberg *et al.*'s translated instrument on a small UK sample, consisting mostly of university students.

Purewal and van den Akker (2006) assessed the importance of altruism and the predictive power of the TPB to willingness to donate oocytes and also incorporated another important factor, namely ethnic differences in attitudes to donate oocytes, in an attempt to explain the shortage of other ethnic oocytes in the UK (Murray and Golombok, 2000). Using Skoog-Svanberg *et al.*'s (2003) translated questionnaire, they found components of the TPB successfully predicted intentions to donate oocytes. However, altruism was not associated with willingness to donate, but there were distinct differences in ethnicity. South Asian women were least likely to donate, and scored significantly higher on the importance of children, importance of a genetic link between parent and child, were more likely to practice their religion and had lower control beliefs and perceived social norms than White women. Choudhary, Haines, Herbert, Stojkovic and Murdoch (2004) also investigated ethnic differences in infertile couple's decisions to donate spare embryos for stem cell research and research in general. They found that Asian couples were significantly less willing to donate their embryos for research compared to White couples. However, the number of Asian couples in the study was very small ( $n=17$ ) compared to White couples ( $n=270$ ), which cast doubts on whether these comparisons are statistically and clinically meaningful. Nevertheless the results are consistent with other research in this field because the link between religiosity and reluctance to donate has also been observed by Chliaoutakis, Koukouli and Papadakaki (2002). However, this is not equivocal. Isikoglu, Senol, Berkkanoglu, Ozgur, Donmez and Stones-Abbasi (2006) found that the majority of the general populations they surveyed in Turkey supported oocyte donation and thought their religion (Islam) would allow oocyte donation, even though oocyte donation is not

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<sup>2</sup> This researcher [Purewal] is not the author of this thesis.

permitted in Turkey and is prohibited by Islamic law (Inhorn, 2006). However, Isikoglu *et al.* (2006) and Baykal, Korkmaz, Ceyhan, Goktolga and Baser (2008) had also found that less than one third of their Turkish respondents actually knew about oocyte donation before it was explained to them on the questionnaire. This does cast some doubts whether Isikoglu *et al.*'s results will remain true after respondents have had some time to think over the consequences of using and donating oocytes.

Purewal and van den Akker (2006) suggested ethnic differences between South Asian and White women's attitudes towards oocytes and willingness to donate may be attributable to cultural differences in perception of parenthood, rather than religion *per se*. Their suggestions concur with previous studies that have examined ethnicity and infertility. For example Culley, Rapport, Katbamna, Johnson and Hudson (2004) investigated social norms and cultural traditions on attitudes towards infertility among British South Asians. They found that in South Asian communities children are highly valued; parenthood is mandatory; and infertility is a stigmatised condition (Culley *et al.*, 2004, 2006, 2007; Hudson and Culley, 2005; Culley and Hudson, 2006). Most infertility treatments including IVF were considered culturally accepted but the use of donated gametes was widely regarded as socially unacceptable (Culley *et al.*, 2004). Bharadwaj (2003) also found that because of the cultural importance of children and the societal stigma associated with infertility, South Asians would conceive children through donated gametes in complete silence and secrecy because they feared social ostracism. These results may explain the shortage of South Asian oocyte donors reported anecdotally and in Murray's and Golombok's (2000) survey.

Although, the research literature has indicated that South Asian women's reluctance to donate oocytes might stem from the importance of children and childbearing in their

community (Bharadwaj, 2002, 2003, 2006; Purewal and van den Akker, 2006; Culley *et al.*, 2004, 2006), the opposite has been shown to be case for White women who are willing to donate. Some investigations have found that the perceived importance of children and appreciation of the desire for motherhood underpin women's reasons for donating oocytes (Raoul-Duval, Letur-Konirsch and Frydman 1992; Weil *et al.*, 1994; Snowdon, 1994; Kalfoglou and Gittelsohn, 2000a; Byrd *et al.*, 2002; Kirkman, 2003; Winter and Daniluk, 2004; Yee, Hitkari and Greenblatt, 2007). An interesting feature of oocyte donor's perceptions of motherhood and parenthood is their belief that parenthood is not reliant on genetic connectedness (Kirkman, 2003). Studies have found that donors reported they did not believe any child conceived using their donated oocytes was 'their child' (Ahuja *et al.*, 1998) and that donors believed the lack of a gestational link with the donor child, meant they were not the child's mother (Snowdon, 1994; Winter and Daniluk, 2004).

The research evidence does appear to suggest that perceptions of parenthood are important in determining oocyte donation intentions and behaviours of women. However, there are only a handful of studies that have measured women from the general population's attitudes and intentions to donate oocytes and between these studies; there are a number of shortcomings which need to be address. For example, some of the discrepancies found within the literature relating to factors such as altruism and religiosity may be attributed to the use of different outcome measurements; use of invalidated questionnaires with no information provided on the questionnaire's validity or reliability (e.g. Lessor *et al.*, 1990; Kazem *et al.*, 1995; Urdpilleta *et al.*, 2001; Baykal *et al.*, 2008; Brett *et al.*, 2008); small samples sizes (e.g. Urdpilleta *et al.*, 2001; Purewal and van den Akker 2006; Brett *et al.*, 2008); samples taken from different countries where oocytes donation legislation and practices vary immensely (e.g. Lessor *et al.*, 1990 in the US; Urdpilleta *et al.*, 2001 in Argentina; Skoog-Svanberg *et al.*, 2003a in Sweden, Kazem *et al.*, 1995, Purewal and van

den Akker 2006 and Brett *et al.*, 2008 in the UK; Isikoglu *et al.*, 2006 and Baykal *et al.*, 2008 in Turkey); and with the exception of Skoog-Svanberg *et al.* (2003a) and Purewal and van den Akker (2006), there is a lack of theory based research (this will be discussed in greater detail in sub-section 1.2.6.1). In addition, to the researcher's knowledge no qualitative research has ever been conducted with women from the general population to examine their attitudes towards oocyte donation and parenthood. Thus, we only have answers to the questions that researchers have asked and do not know about any hidden or unknown fears, concerns and opinions women may have in relation to oocyte donation. Studies in this thesis have been designed to address some of these very shortcomings. For example, only validated instruments were used, attempts were made to obtain large samples and apply theory, and qualitative works were conducted to extrapolate women's attitudes towards oocyte donation and parenthood. It is necessary, therefore, to review the literature on parenthood and motherhood and recognize some of the important issues relating to perceptions of parenthood, which could have a significant bearing on attitudes and intentions to donate oocytes. This is done in the section below.

### **1.2.3 Perceptions of Motherhood & Parenthood**

Oocyte donor's perceptions of motherhood and parenthood appear to deviate from the dominant ideology of motherhood/parenthood which has been socially constructed in the Western world, which is believed to be an integral part of a woman's identity (Ussher, 1989). The cultural expectation to bear your own children, live in biologic family units and for biological/genetic parenthood is strong and considered to be the societal norm (Oakley, 1980; Pheonix, Woollett and Lloyd, 1991; Letherby, 1994; Hollway & Featherstone, 1997; Rogan, Shmied, Barclay, Everitt, Wyllie, 1997; Ulrich and Weatherall, 2000). Most women expect to be the genetic and biological mother to their children (Lampic, Skoog-

Svanberg, Karlstrom and Tyden, 2006; Miller, 2007). Anything which deviates from this may be considered to be 'unnatural'. Motherhood is embedded in a discourse that mothering is 'natural' and 'instinctive' (Marshall, 1991; Miller, 2007), provides identity and status to a woman (Ussher, 1989) and ambivalence with motherhood, childlessness or giving up your children (including oocytes) is seen as psychologically or socially dysfunctional (Marshall, 1991; Gillespie, 2001, 2003; Englert, Serena, Philippe, Fabienne, Chantal and Anne, 2004; Lee and Gramotnev, 2006). Through donating their oocytes, donors conflict with the dominant narrative of parenthood because they participate in the creation of a non-biologic family and allow 'others' to raise their genetic child(ren).

Centrality of motherhood is the perception that 'good mothers' are women who are heterosexual, selfless, fertile (Gillespie, 2000), young and middle class (Hadfield, Rudoe and Sanderson-Mann, 2007). Motherhood is seen to increase a woman's self worth, raise her status and necessitate less selfish behaviour (Bailey 1999). 'Good mothers' are women who breastfeed their children (Marshall, Godfrey and Renfrew, 2007) are loving and caring, patient, good listeners and communicators and sensitive to the needs of their children (Brown, Small and Lumley, 1997). The media also portray highly idealised images of motherhood and promotes traditional family units as the ideal (Heitlinger, 1976), and teenage mothers, older mothers, voluntary childless women and women seeking fertility treatment are scrutinised and criticised for deviating from the social norm (Hadfield *et al.*, 2007). This might explain why even young, well-educated women today still continue to endorse the 'traditional mother' role for themselves (Arthur and Lee, 2008) and Nicholson (1998) found that motherhood remains central to women's lives. Tyden, Skoog-Svanberg, Karlstrom, Lihoff and Lampic (2006) surveyed 300 female students on the impact they expected motherhood would have on their lives. They found that most participants believed they would develop as a person, give and receive more love and have

a stronger relationship with partner, thus reflecting romantic narratives of parenthood prevalent in popular culture and society on a whole. Similarly, O'Laughlin and Anderson (2001) also found that 80% of undergraduates reported a desire to become parents and were significantly more likely to underestimate the negative aspects of parenthood (e.g. loss of freedom) compared to actual parents.

These romantic narratives of parent/motherhood often conflict with the reality of raising children (Phoenix *et al.*, 1991; Barclay and Kent, 1998; Bondas and Eriksson, 2001; Hall and Wittkowski, 2006; Shelton and Johnson, 2006; Matthey, 2007) and qualitative studies have found rich data that have demonstrated the adverse consequences of the societal pressures to conceive and idealised perceptions of motherhood. For example, parenthood for some women is associated with poor social, economic and health outcomes (Barclay and Lloyd, 1996; Nanchahal *et al.*, 2005; Buultjens and Liamputtong, 2007) and stigma for some teenage mothers (Whitley and Kirmayer, 2008). Studies have found that women's high expectation of parenthood, compared to the actual lived experience, negatively affects their adjustment to the motherhood role (Rubin, 1984; Weaver and Ussher, 1997; Carolan, 2005). Choi, Henshaw, Baker and Tree (2005) found women's expectations were based on various traditional myths of parenthood, such as popular images of 'happy families' and mothering comes 'naturally'. Oakley (1986) argued that it is common for most women to experience a difficult transition to motherhood. For example, feelings of isolation and feeling inadequate are quite common in new mothers (Wilkins, 2006; Woograsingh, 2007).

Through reviewing the literature on motherhood, one can easily be mistaken in thinking motherhood is detrimental to womanhood. This is partly because feminist academics have contributed significantly to the motherhood literature with an explicit political agenda to highlight the inequality women suffered as a consequence of childbearing (e.g. Ussher,

1989; Pheonix *et al.*, 1991; Weaver and Ussher, 1997; Ulrich and Weatherall, 2000; Gillespie, 2001; Choi *et al.*, 2005; Wilkins, 2006). For example, Firestone (1971) argued that motherhood was the cause of women's oppression and women need to be freed from the 'tyranny of their reproductive biology' (pp. 223). However, there has been a movement within the feminist faction (Featherstone, 1997; Kirkley, 2000), which has joined other researchers and discussed how motherhood can also empower women. For instance, researchers have found that motherhood gives women a new social identity, which is beneficial and important to these mothers (Bailey, 1999; Smith, 1999; Seamark and Lings, 2004). Fernquist (2004) found even single parenthood was a protective factor against suicide and Green and Kafetsios (1997) conducted a large survey with 1285 women and found that for most, motherhood was a positive experience and 79% reported feeling proud being a mother.

Another serious limitation of the mother/parenthood literature is that it is often very White, middle class-centric, meaning that the researchers are often White women from middle class professional backgrounds, who interview other White, middle class women (Bhopal, 1998; Liamputtong, Yimyam, Parisunyakul, Baosoung and Sansiriphun, 2004). Further, many of the studies on motherhood have also used qualitative methodology and small samples sizes (e.g. Barclay and Lloyd, 1996; Ulrich and Weathcrall, 2000; Choi *et al.*, 2005; Nelson, 2004; Marshall *et al.*, 2007). Consequently, this has given a tunnel-vision perception of motherhood. Qualitative researchers do not aim to be representative in their data collection methods and analyses and thus the ambivalence found among White (middle class) women should not be interpreted as universal. For example, Liamputtong *et al.* (2004) found Thai women did not report the low level of satisfaction with motherhood, ambivalence and its consequent unhappiness found in several studies with White, Western women (e.g. Rubin, 1984; Oakley, 1986; Barclay and Lloyd, 1996; Choi *et al.*, 2005;

Carolan, 2005; Nanchahal *et al.*, 2005). Liamputtong and Naksook (2002) argued that cultural beliefs and practices have an influence on women's perceptions and experiences of motherhood. Unfortunately there are only a limited number of studies that have focused on non-Western women's perceptions motherhood (Bhopal, 1998; Liamputtong *et al.*, 2004, 2005). The few studies that have been conducted with South Asian women have observed the social importance of children (Bhopal, 1998; Culley *et al.*, 2006). Sewpaul (1999) explained that the importance of children stems from Hindu philosophy which states it is a duty of a couple to bear genetically related children because children are needed to perform the sacrificial duties upon the death of a parent (Bharadwaj, 2003). Motherhood for South Asian women is seen as a natural and immediate result of a marriage. The birth of children, particularly sons are needed to carry on the male bloodline. Thus, providing women with status and respect in the family and wider community (Bhopal, 1998; Bharadwaj, 2002; Inhorn and van Balen, 2002; Apte, Mali, Navle and Revle, 2004; Nene, Coyaji and Apte, 2005; Widge, 2005). These findings are important in the context of oocyte donation and could potentially provide some background information to why women from South Asian and South East Asian backgrounds do not donate. Consequently, this thesis will investigate South Asian's perceptions of parenthood and oocyte donation in an attempt to address the shortage of South Asian oocyte donors and the lack of parenthood research with non-White populations.

To sum, the research literature on motherhood has found that even for contemporary women, motherhood is an important part of women's social and personal identities. However, studies have also highlighted the ambivalence, inequality and at times hardship that some women experienced as a consequence of becoming mothers. Despite the reported difficulties associated with parenthood, most individuals aspire to be parents



(O'Laughlin and Anderson, 2001). The next section will present studies on the reasons for parenthood.

#### **1.2.4 Reasons for parenthood**

Although the want for children is almost universal (Edelmann, Humphrey and Owens, 1994), the reasons for wanting children are not. Ulrich and Weatherall (2000) asked a group of infertile women why they wanted to become mothers and they gave a range of complex and intersecting reasons for wanting to have children. Women discussed wanting to have children as a natural instinct or biologically determined; as a developmental stage in their relationship with their partner; and social expectations. These reasons reflected the dominant understanding of motherhood in our society. However, a criticism to Ulrich's and Weatherall's study is that they did not separate women who had achieved live birth through fertility treatment ( $n = 9$ ), to those who had adopted a child ( $n = 2$ ) and those who remained childless ( $n = 8$ ). Further, it is not clear whether the women who had achieved the live birth were the genetic mothers to their children. This information would have been useful and provided insight into whether there were any differences between the parous and nulliparous women relating to their reasons for parenthood. It is possible that parous women (particularly women who had genetically related children) may have endorsed more traditional and dominant narratives of parenthood in their reasons for wanting to have a child (because they have a biologic and genetic child which conforms to popular ideology) more than nulliparous women.

Benzies, Tough, Tofflemire, Frick, Faber and Newburn-Cook (2006) found there were a diverse range of factors that influenced modern women's decisions about childbearing. Using in-depth interviews with 20 women, they found individual factors (including

biological clock and stable relationship); familial factors (including partner's readiness); and societal factors (including social acceptability of delaying childbearing) all underpinned the decision to have a child. 'Motherhood as mandatory' was still evident in their work; however it was interesting to learn that women were using the societal acceptability of delayed childbearing discourse to justify their decision to have children later in life after pursuing their career. These results demonstrated how perceptions of parenthood in modern western cultures are changing in conjunction with the technological advancements in fertility treatment and the prolongation of human life.

Ulrich and Weatherall (2000) and Benzies *et al.* (2006) used qualitative methodologies and asked women why they want to have children. However, the majority of the research literature on the reasons for parenthood has presented scales to participants. A number of scales have been developed over the last three decades that have aimed to assess the reasons for parenthood. For example, Hoffman (1975), and Edelmann *et al.* (1994) both identified nine separate (and different) values of having children; van Balen and Trimbos-Kemper (1995) identified six reasons for parenthood; and more recently, Stöbel-Richter, Beutel, Finck and Brähler, (2005) reported 2 themes (see table 1.2.1 for some of the items on the parenthood scales identified in these studies). Early studies that have investigated reasons for parenthood centred on identifying the value of having children (e.g. Hoffman, 1975; Hoffman and Manis, 1979). Often the aims of these studies were to understand the motivation for parenthood to be able to predict fertility trends in a rapidly changing and dynamic society and children were often seen as a source of financial and social value to parents (e.g. Fawcett, 1978). This approach is outdated because in modern Western cultures, children are more likely to become a financial burden than an asset (Langdrige, Sheeran and Connolly, 2005). In spite of these problems, the research evidence using the old reasons for parenthood scales can reveal some important and significant findings. For

example, the Parenthood-Motivation List (PLM) (van Balen and Trimbos-Kemper, 1995) has been the most used reason for parenthood measurement in the research literature. Studies using this scale have found that the reasons for wanting to be parents reflect socio-cultural values regarding women's and men's roles in society and reasons also appear to reflect personal characteristics and lived experiences of individuals.

Specifically, studies using the PLM have found reasons differ depending on an individual's age, gender, fertility status and ethnic background. As can be seen from table 1.2.1, the scale measured six motives for parenthood. Using the PLM, van Balen (2005) found that younger first time mothers were significantly more likely to endorse identity and motherhood as important motives for parenthood compared to older first time mothers; older first time mothers had less traditional reasons for motherhood and reported less feminine characteristics; and the desire to have children was stronger among young women compared to older fertile and infertile women. van Balen suggested that for some young women the desire for parenthood, strengthening of their own identity by motherhood and the status and respect of motherhood overrides other motivations to postpone parenthood (e.g. career). Whereas, for older women, personal development is an important reason to postpone or even reject motherhood aspirations (McQuillan, Greil, Shreffler and Tichenor, 2008).

Table 1.2.1: Table presenting the reasons for parenthood scales

Scales	Reasons for Parenthood								
<b>Hoffman (1975)</b>	Adult Status & social identity Expansion of the self Morality, religion, altruism Primary group ties Stimulation, novelty, fun Achievement, competence, creativity Power, influence & effectance Social comparison, competition Economic-utility								
<b>Edelmann, Humphrey and Owns (1994)</b>	Having children makes a marriage into a family It is only natural that a woman should want children The disappointment of not having children is greater for a woman than it is for a man It is only natural that a man should want children Having children makes a stronger bond between husband and wife It is more difficult for a man to accept being sub-fertile than it is for a woman Having children is the most important function of marriage Becoming a mother makes a woman truly female A man can never be sure about his masculinity until he is a father								
<b>van Balen and Trimbos-Kemper (1995)</b>	<table border="0"> <tr> <td><b>Individual Reasons:</b></td> <td><b>Social Reasons:</b></td> </tr> <tr> <td>Happiness</td> <td>Identity</td> </tr> <tr> <td>Well being</td> <td>Continuity</td> </tr> <tr> <td>Parenthood</td> <td>Social Control</td> </tr> </table>	<b>Individual Reasons:</b>	<b>Social Reasons:</b>	Happiness	Identity	Well being	Continuity	Parenthood	Social Control
<b>Individual Reasons:</b>	<b>Social Reasons:</b>								
Happiness	Identity								
Well being	Continuity								
Parenthood	Social Control								
<b>Stöbel-Richter, Beutel, Finck and Brähler (2005)</b>	<b>Desire for emotional stabilisation and finding meaning.</b> For example, 'A child gives me the feeling to have a real home' <b>Desire for social recognition.</b> For example, 'A child is necessary for me to be acknowledged as an adult'								

Bos, van Balen and van den Boom (2003) found gender and sexual orientation differences using the PML. They found heterosexual women were more likely to rate happiness and life fulfilment as important motives for parenthood compared to males. Whereas, lesbian parents were more likely to report happiness as more important and identity as less

important reasons for parenthood compared to heterosexual couples. van Rooij, van Balen and Hermanns (2006) also found gendered and ethnic difference between infertile Turkish migrants and infertile Dutch populations. Turkish migrants were more likely to rate social parenthood motives on the PML (e.g. identity, continuity and social control) as more important motives for having children compared to the Dutch sample. They also found that Turkish men were more likely to rate the continuation of family name and line as an important motive for parenthood compared to Turkish women. However, van Rooji *et al.* had nearly two times more Dutch participants ( $n = 162$ ) in their sample than Turkish migrants ( $n = 58$ ). It may be for this reason why van Rooji and colleagues had also included in some Turkish participants (16% of sample) who were born in the Netherlands in their Turkish migrant sample, even though they cannot be described as 'migrants'.

Dyer, Mokoena, Maritz and van der Spuy (2008) had also assessed reasons for parenthood using the PLM with 50 infertile couples in South Africa, but found no significant gender difference. Dyer (2007) reviewed the literature on parenthood in African and argued that African men and women had children for social security, status, maintaining the family lineage and for emotional needs. Dyer argued that parenthood had deeper roots in Africa than Western countries and social repercussions of childlessness are frequent and severe for men and women. However he did not compare White participants to Africans and it would be unfair to suggest that Africans have a greater and deeper need for children than White, Western couples. It is possible however that Africans might have different reasons for wanting to have children. Africans have been found to want children for personal and social reasons (Dyer, 2007; Dyer *et al.*, 2008), whereas White Western couples are more likely to only endorse personal reasons for wanting to be parents (Stöbel-Richter *et al.*, 2005; van Rooij *et al.*, 2006) and social reasons are largely perceived to be less relevant. Clearly more research is needed in cultural differences in the desires and perceptions of

parenthood among people from different cultures and this thesis will attempt to do exactly this.

Although, the PLM has been successfully used in the past, the scale is quite limited and only covers six reasons for wanting to have children. Benzies *et al.* (2006) found there were a diverse range of individual, familial and social factors and reasons for having children and it unlikely that the PLM is sophisticated enough to capture these. Further, the scale was developed in 1995 and appears to be quite dated, particularly in the current social climate of delayed childbearing and acceptability of assisted reproductive technologies and third party conception (Greenfeld, 2002). More recent research has now progressed from merely listing the reasons for having children, to incorporating intentions and attitudes into parenthood decision making, not only to predict fertility behaviour but also to understand the motives of couples seeking infertility treatment (e.g. Langdridge, Connolly and Sheeran, 2000). For example, Langdridge *et al.* (2000) examined the reasons behind the intentions to have children among a group of fertile and infertile couples using network analysis techniques. They found that the most common reasons reported between all groups were the need to give and receive love, experience the enjoyment of raising a child and to become a family. Building on their previous work, Langdridge *et al.* (2005) surveyed 897 White married childless couples in the UK to understand the reasons why they would or would not want to have a child. This led to the development of the reasons for parenthood scale incorporating an original pool of 35 reasons. The final 11 item scale significantly distinguished between people who intend(ed) to, or did not intend to have a child, and was found to be equally appropriate for use on men and women. The scale included six reasons for parenthood (*fulfilment, to please partner, make family, part of both of us, good home, biological drive*) and five reasons against (*other things, restrict freedom, to partner's wishes, interfere with career, concern over over-population*).

Langdridge argued that the Reasons for Parenthood scale reflected dominant and normative reasons for wanting to have children (Langdridge, 2008, personal correspondence). The 11 items reason for parenthood scale demonstrated good reliability and achieved a Cronbach's alpha of 0.84. Langdridge *et al.* have conducted a good quality study and produced a short reliable scale. However, there are a few shortcomings to their scale. In particular, the sample only consisted of white married and childless couples which limit the applicability of this scale to non-married, non-White and people with children samples. Furthermore, essentially the scale (like other reasons for parenthood scales) is a list of reasons for wanting to have children (or not) and provides no insight to how respondents arrive at these reasons, which reasons are more important than others and what underlying factors determine these reasons. Therefore, one of the aims of this thesis was to explore people's reasons for and against parenthood using qualitative research methods and to examine gender, age, parity and ethnic differences between participants. In addition, as the Reasons for Parenthood scale represents dominant and normative perceptions of parenthood (Langdridge, 2008, personal correspondence), this scale will be used to quantitatively investigate whether there is an association between conventional and non-conventional perceptions of parenthood and oocyte donation intentions (as discussed in sub-section 1.2.2 and 1.2.3). To sum, the research evidence suggests wanting to become a parent is a universal desire, however the reasons for wanting parenthood are not. There are a few scales that measure reasons for parenthood; however some scales are better than others. In particular, the Reasons for Parenthood scale developed by Langdridge *et al.* (2005) appears to be the most up-to-date and sophisticated measurement. Moving on, the literature review has so far only considered oocyte donation for treatment and related areas (e.g. parenthood). The following section will now consider oocyte donation for research.

### **1.2.5 Oocyte donation for research**

In 2007, the HFEA licensed new legislation that allowed women to donate their oocytes for research as patient or volunteer donors (HFE Act, Schedule 3, 5(1); HFEA, 2007a; HFEA, 2008a, Code of Practice – Section G8). Until recently, research projects that have been licensed by the HFEA obtained their oocytes from either those leftover after patients have undergone IVF; are not suitable for treatment (e.g. oocytes that failed to fertilise); or from couples who no longer require their oocytes (HFEA, 2006). However, medical researchers argue that they need good quality oocytes for therapeutic and research purposes. Newcastle University was among the first institutions to be given permission by the HFEA to use oocyte sharing as a means to recruit oocytes for stem cell research (Newcastle University press office, 2006).

Procedurally, there is little difference between oocyte donation for research or fertility treatment (Magnus and Cho, 2005). However, unlike oocyte donation for treatment, it is unclear what factors would underpin women's decision to donate for research. For instance, although there is some evidence to link the importance of parenthood and oocyte donation for treatment, there is no available research evidence on oocyte donation for research. Further, the objectives and the personal, social and moral ramifications of donating oocytes for research and treatment are clearly disparate. Firstly, in medical research such as stem cell research, the goal is to progress science and medicine. Although research using donated oocytes is not immediately beneficial to individuals, it is hoped that thousands and millions of people may benefit in the future from the new research advancements using donated oocytes. Secondly, donors have no social, moral or legal rights over the research or subsequent treatment. Whereas, in the reproductive world, the objective is to achieve a pregnancy through donated oocytes and the infertile couple are immediate beneficiaries of the donation. Lastly, there are complex personal and social



implications for oocyte donors for treatment because donors are the genetic (but not legal) parent of the resultant child whereas they are facing a genetic void when they donate for research. Therefore, it might be inappropriate to base women's past behaviour and attitudes towards oocyte donation for treatment as a model to understand women's reasons for donating oocytes to research. Further, some studies have been conducted that have explored women's attitudes and willingness to donate embryos for research, however the samples have consisted largely of patient donors and there is research evidence suggesting there are distinctive differences between people's perceptions of embryos and oocytes (Kazem *et al.*, 1995; Soderstrom-Anttila, Foudila, Ripatti and Sieberg, 2001b; Kirkman, 2003; Roberts and Throsby, 2008).

Hug (2008) reviewed scientific articles that have investigated donation of surplus embryos for medical research and found that only a small percentage of couples donate their spare embryos to research. However, factors that influenced this small percentage to donate were knowing the research purpose (Bjuresten and Hovatta, 2003; Krones, Neuwohner, Bock, Manolopoulos, Tinneberg and Richter, 2006); being at the end of IVF treatment (Kloek, Sheinin and Kazer, 2001a, 2001b; Skoog-Svanberg, Boivin and Bergh, 2001); having non-viable embryos that cannot be used for treatment (Parry, 2006); having conceived through IVF (McMahon, Leslie, Saunders, Porter and Tennant, 2003; Choudhary *et al.*, 2004) and being altruistic (Bjuresten and Hovatta, 2003; McMahon *et al.*, 2003; Krones *et al.*, 2006). However, many of these factors (such as being at end of IVF treatment and having non-viable embryos) relate exclusively to patient donors and cannot be readily applied to women from the general population.

Studies have reported that the perceived importance of a genetic link is also a theme that appears to be important in the embryo donation for research literature. Studies have found

that infertile patients were significantly more likely to agree to donate their embryos to research than to fertility treatment for other couples (McMahon *et al.*, 2003; Burton and Sanders, 2004; Bangsboell, Pinborg, Yding-Andersen and Nyboe-Andersen, 2004; Newton, Fisher, Feyles, Tekpetey, Hughes and Isaesson, 2007). For some infertile couples, donating embryos to research was preferable because they did not want another couple rearing their genetic child (Krones *et al.*, 2006). Laruelle and Englert (1995) found that infertile couples who emphasised social parental bonding were more likely to donate their embryos to another couple than couples who emphasised genetic lineage. Religion also appears to be relevant to their decision making process. Studies have found that infertile men and women who held moderate to strong religious beliefs were less likely to donate compared to those who did not hold strong religious convictions (Burton and Sanders, 2004; McMahon *et al.*, 2003; Fuscaldo, Russell and Gillam, 2007). Factors that did not influence the decision to donate were age (Choudhary *et al.*, 2004; Burton and Sanders, 2004) and infertility duration (Bangsdoll *et al.*, 2004; Choudhary *et al.*, 2004).

Many of the criticism applied to oocyte donation for treatment research can also be applied to research on embryo donation. For example, most of the studies have used unvalidated and different questionnaires; sample sizes are small and non-representative; and there is a lack of theory based research or use of other research methodologies except surveys (e.g. Skoog-Svanberg *et al.*, 2001; McMahon *et al.*, 2003; Burton and Sanders, 2004; Bangsboell *et al.*, 2004; Newton *et al.*, 2007). Undoubtedly, embryo donation for research mirrors oocyte donation because both involve donating genetic materials to research. However, studies on embryo donation consist largely of patient donors who are surveyed on their opinions on whether they would rather donate their remaining embryos to research or discard them (e.g. de Lucey, 2007) and do not apply to oocyte donation for research. Little is known therefore about the psychological and social determinants of oocyte donation for

research. Clearly, there is a need for research and theory in this area to address these issues. Thus, this thesis has set out to theoretically examine attitudes and intentions towards oocyte donation for research and investigate whether there are any differences in attitudes and intentions between the two donation domains. Three theoretical approaches were applied to oocyte donation for treatment and research in this thesis and they are described in the sections below.

### **1.2.6 Psychological theories which underpin this thesis**

In attempts to systematically conduct, interpret and fold theory into data and research, this thesis utilised three psychological approaches. Specifically, the Theory of Planned Behaviour was applied to oocyte donation for treatment and research using different research methodologies. The Interpretative Phenomenological Analysis approach was used to interpret the findings from qualitative investigations of meaning of parenthood and attitudes towards oocyte donation. Finally, the framing effect was tested in an experimental study designed to change attitudes towards oocyte donation for treatment. The following section will first describe the Theory of Planned Behaviour and justify the use of this model in accounting for oocyte donation intentions.

#### ***1.2.6.1 Theory of Planned Behaviour***

Although research into oocyte donation is gaining momentum, there is a notable lack of theory in oocyte donation research and counselling (Fielding, Handley, Duqueno, Weaver and Lui, 1998; Applegarth and Kingberg, 1999; van den Akker, 2006). However, a few studies have successfully applied the Theory of Planned Behaviour (TPB) (Ajzen, 1985, 2002) to oocyte donation for treatment (Skoog-Svanberg *et al.*, 2003a; Purewal and van den Akker, 2006). To the author's knowledge no other theory has been applied to oocyte

donation. The TPB is designed to predict and explain human behaviour (Ajzen, 1991). It is potentially therefore a valuable model for further research into oocyte donation and was a preferred model in this thesis because it allowed for comparisons with previous research.

The TPB is an extension of the Theory of Reasoned Action (TRA) (Fishbein and Ajzen, 1975; Ajzen and Fishbein, 1980), “made necessary by the original model’s limitations in dealing with behaviours over which people have incomplete volitional control” (Ajzen, 1991, pp. 181). So, according to the TRA model, behaviour is guided by beliefs about the consequences of a behaviour (i.e. behavioural beliefs) and beliefs about how important people would like them to behave and the motivation to comply to their expectations (i.e. normative beliefs). Behavioural beliefs produce general attitudes *towards a behaviour*, which are positive or negative judgements about performing the behaviour and normative beliefs produce *subjective norms*, which refer to the perceived social pressure to perform or not perform a particular behaviour. The only difference between the TRA and TPB is that the TPB also considers beliefs about the factors that may facilitate or impede performance of a behaviour (i.e. control beliefs). The TPB asserts that control beliefs produce *Perceived behavioural control*, which is the extent to which a person feels they can perform the behaviour (Ajzen, 1985, 2002). Ajzen (1992) likened perceived behavioural control to self-efficacy. In the TPB, all three constructs (i.e. attitudes, subjective norms and perceived behavioural control) work in parallel with each other as a determinant of intention and in return, intentions are assumed to be the antecedents of actual behaviours (Armitage and Conner, 1999a; Ajzen, 2002). However, perceived behavioural control (in concert with intentions) can also directly predict behaviour when it accurately reflects the person’s actual control over behavioural performance (Sheeran, Trafimow and Armitage, 2003). In general, favourable attitudes towards the behaviour, greater subjective norms to perform the behaviour and perceived behavioural control beliefs to carry out the behaviour should

predict intentions to perform the behaviour (in this case oocyte donation) in the TPB model (Sec fig 1.2.3 for a graphical display).

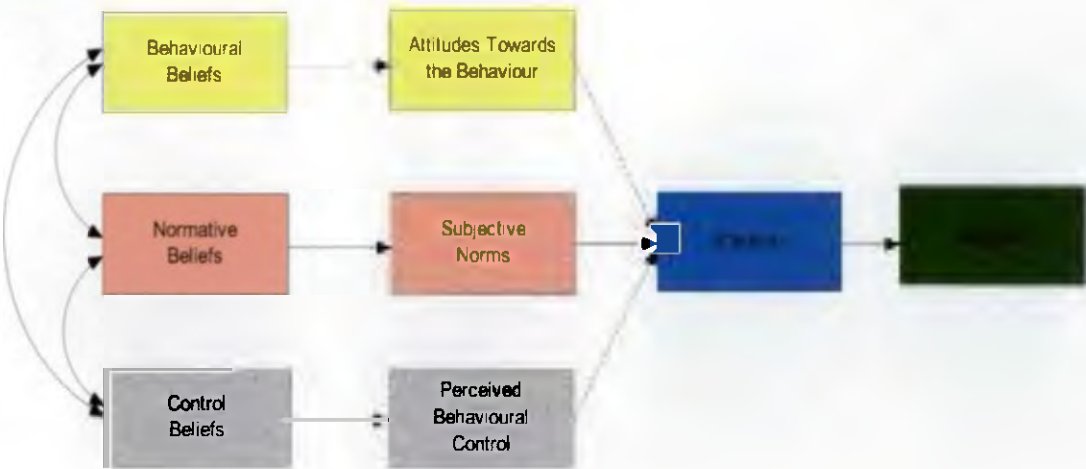


Figure 1.2.3: The Theory of Planned Behaviour

The TRA is a model that predicts voluntary behaviour where the individual has a great deal of behavioural control, so a perceived behavioural control component would be redundant. Whereas, the TPB predicts behaviour which is not entirely under their control, thus perceptions of control beliefs are important in determining intentions (Sheeran, Trafimow and Armitage, 2003; Kellar and Abraham, 2005). According to Ajzen and Madden (1986), perceived behavioural control within the TPB becomes a better predictor of intentions if the behaviour being predicted becomes less under the control of the individual and this has been supported by research evidence through behaviours such as condom use (e.g. Sheeran and Taylor, 1999). For example, Munoz-Silva, Sanchez-Garcia, Nunes and Martins (2007) studied condom use among 601 male and female university students. They found that the TPB model significantly predicted better condom use intention for males and females than the TRA. However, the TPB was no better than the TRA in predicting actual condom use behaviour. Further, previous research has also found that the TPB is just as proficient as the TRA in predicting easy to ‘control’ behaviours (Madden, Ellen and Ajzen, 1992).

The TPB is a popular model in the health psychology literature. For example, the TPB has predicted smoking behaviour (Harackch, Scholte, Vermulst, de Vries and Engels, 2004), dietary behaviour (Armitage and Conner, 1999a,b) and contraception use (Fekadu and Kraft, 2002). In fact, Conner, Graham and Moore (1999) found that components of the TPB (attitudes, subjective norms and perceived behavioural control) predicted condom use intentions even in respondents who were intoxicated with alcohol (consumed three or more units of alcohol). Further, although the TPB is a model that typically suits quantitative research designs, recent attempts have also applied the TPB to qualitative research. For example, Dunn, Mohr, Wilson and Wittert (2008) interviewed 66 Australian participants about their beliefs about fast food. Participants were asked what they believed were the advantages or disadvantages of eating fast food (*attitudes* component of the TPB); who would approve or disapprove of them eating fast food (*subjective norms* component of the TPB); and what factors would make it easier or more difficult to eat fast food (*perceived behavioural control* component of the TPB). Dunn *et al.*'s findings revealed that although most participants believed fast food is not a healthy choice and that their immediate family would disapprove of frequent fast food consumption, most participants consumed fast food at least once a week. Factors that appeared to be important in fast food consumption were perceptions of value for money, working long hours and being unable to prepare meals, which indicated control beliefs are important in the decision to consume fast food.

Armitage and Conner (2001a) conducted a meta-analysis on 185 studies that have tested the TPB. Consistent with some previous reports, they found the TPB accounted for 27% and 39% of the variance in behaviours and intentions, respectively. However, there is a considerable amount of variance that the TPB does not explain. Further, Armitage & Conner (2001a) found intentions were the strongest predictors of behaviours ( $r = .47$ ), confirming past studies (Armitage and Conner, 1999a; Sheeran, 2002). Perceived

behavioural control and attitudes towards a behaviour were useful constructs in predicting behaviour and perceived behavioural control could independently predict intentions and behaviour. However, subjective norms was found to be the weakest predictor of intentions or behaviours.

However, serious limitations to the TPB literature are that there are considerable inconsistencies in the conceptualisation of constructs (e.g. Kraft, Rise, Sutton and Roysamb, 2005; Rhodes, Blanchard and Matheson, 2006); inclusion of additional variables and significant modifications to the model (e.g. Armitage and Conner, 1999b, 2001a; Terry, Hogg and White, 1999; Giles, McClenahan, Cairns and Malle, 2004; France, France and Himawan, 2008) and a sheer multiplicity in the outcome measurements used. The discrepancies are so great that any meta-analyses (e.g. Godin and Kok, 1996; Armitage and Conner, 1999a, 2001a; Cooke and Sheeran, 2004) reported must be interpreted with some caution, because TPB models and outcome measurements are so varied. For example, some researchers such as Schaalma, Kok and Peters (1993) preferred to use self efficacy measurements over perceived behavioural control. This is because there has been some evidence to suggest self efficacy may be a better predictor of intentions than perceived behavioural control (Armitage and Conner, 1999a). Further, Kraft, Rise, Sutton and Roysamb (2005) demonstrated difficulties in conceptualising the TPB through confirmatory factor analysis. Kraft *et al.* found perceived behavioural control could be conceived as consisting of three separate but interrelated factors (perceived control, perceived confidence and perceived difficulty) or two separate but interrelated factors (self efficacy and perceived difficulty). Thus highlighting the problems researchers have in examining the components of the TPB. There have been other criticisms relating to poor predictive power of individual constructs (Fekadu and Kraft, 2002). For example, Armitage and Conner (2001a) found subjective norms had the weakest predictive power

out of the other constructs (attitudes and perceived behavioural control). Sheeran and Orbell (1999) suggested the relative weakness of subjective norms might be because subjective norms and attitudes could be measuring the same constructs. Also, intentions, which according to the TPB are the strongest predictors of behaviours, have often been found to be poorly related to actual behaviour (Armitage and Conner, 1999a, 2001a; Sheeran, 2002), although it is the strongest predictor of behaviours in the TPB itself (Armitage & Conner, 1999a, 2001a; Sheeran, 2002).

Further, some researchers have included other additional predictors to the model, such as intrinsic motivation (spontaneous form of motivation that arises from the fundamental needs for relatedness, competence and autonomy) (Chatzisarantis, Hagger, Smith and Sage, 2006, pp 230), self-identity (Armitage and Conner, 1999b; Terry *et al.*, 1999), affective cognitions (Rhodes *et al.*, 2006) and moral norms (France *et al.*, 2008). Bruijn, Kremers, de Vet, de Nooijer, van Mechelen and Brug (2007) investigated whether habit moderated the influence of intention on fruit consumption in a large Dutch adult sample ( $n = 521$ ). Using a seven day dietary record, they created three groups: low habit (8% of participants met the recommended level of fruit consumption per day); medium habit (18% of participants met the recommended level of fruit consumption per day) and high habit (50% of participants met the recommended level of fruit consumption per day). Bruijn *et al.* found that intention was a significant predictor of fruit consumption in the low and medium habit group but not high habit. However, perceived behavioural control was the strongest influence on behaviour in the high habit group. Thus, Bruijn *et al.* suggested that intention to consume fruit was dependent on habit and reporting high levels of perceived behavioural control appeared to be more important in predicting fruit consumption than intentions, but only for participants who habitually consume fruit. Although, Bruijn *et al.*'s conclusions appear to be supported by the evidence, some caution must be voiced against



their 'highly educated' sample and no validated cut-off point for differentiating between low, medium and high habit groups. Furthermore, Cooke and Sheeran (2004) conducted a meta-analysis and found studies have reported that a variety of variables such as accessibility (strength of mental association between attitudes and behaviour), temporary stability, past experience, certainty, ambivalence and affective-cognitive association moderate the TPB model. Finally Trafimow and Finlay (1996) and Sheeran *et al.* (2002) also found participant characteristics, such as how much control individuals have in their life generally also influences the TPB results.

The poor conceptualisation of components of the TPB and poor predictive power is a serious shortcoming of the model and may explain the inconsistencies in the research literature. However, the inclusion of additional variables and moderators may not necessarily be a flaw and could in fact account for some of the model's appeal. Specifically, the TPB was not designed to be a rigid model and the inclusion of additional variables does not conflict with the theoretical premise of the model. According to Ajzen (1991), the TPB is 'open to the inclusion of additional predictors' (pp. 199), thus resulting in the greater flexibility of and application to a variety of behaviours, research situations and different populations. However, the inclusion of additional variables may also represent the fact the original TPB model is inadequate in fully accounting for behaviours and intentions.

Despite the limitations associated with the TPB, the model has been repeatedly used to explain a variety of behaviours including donation behaviour. The TPB has been successfully applied to organ and tissue donation behaviour (Kent, 2002; Bresnahan, Lee, Smith, Shearman, Nebashi, Park and Yoo, 2007; Mayrhofer-Reinhartshuber, Fitzgerald, Benetka and Fitzgerald, 2006), blood donation (Giles and Cairns, 1995; Armitage &

Conner, 2001b; Giles, McClenahan, Cairns and Mallet, 2004; Lemmens, Abraham, Hockstra, Ruiter, De Kort, Brug and Schaalma, 2005; Ferguson, France, Abraham, Ditto and Sheeran, 2007; France, France and Himawan, 2008), and donation of money to charity (Smith and McSweeney, 2007). The TPB has been applied to these behaviours in attempts to understand the social and cognitive determinants of altruistic donation, because, like oocyte donation, there is no clear understanding of the factors that motivate these types of behaviours (Giles *et al.*, 2004). For example, Mayrhofer-Reinhartshuber *et al.* (2006) investigated whether the TPB predicted intentions to consent to the organ donation of a deceased. However as they only measured attitudes and subjective norms, they were in fact only evaluating the TRA. Despite this, they found that attitudes and subjective norms were important factors in the decision to give consent. Unfortunately, Mayrhofer-Reinhartshuber *et al.* did not analyse their data to measure whether attitudes and subjective norms predicted behavioural intentions.

It is important to note that most of the research evidence has applied additional variables or used modified versions of the TPB to measure donation intentions or behaviour. For example, within the blood donation literature self efficacy, self-identity and moral norms have been found to be important factors in determining blood donation (e.g. Giles *et al.*, 2004; France *et al.*, 2008). For example, France *et al.* (2008) used path analyses to measure whether a modified version of the TPB, which incorporated moral norms and self-efficacy predicted re-donation intentions among 237 experienced blood donors. Results revealed that although the model fit was good, the path co-efficient for attitudes to intentions and self-efficacy to intention differed for males and females. For males, attitudes were more strongly weighted to intentions than for females. While, self-efficacy played a more important role in determining intentions than for males. Armitage & Conner (2001b) also investigated blood donation intentions among 136 university students and found that an

extended model of the TPB, which incorporated self-efficacy and self-identity, accounted for 76% of the variance in donation intention. However, subjective norms and perceived behavioural control were non-significant predictors and self-efficacy was the strongest predictor of behavioural intentions. These results suggested that confidence in one's ability to donate blood was the most important factor in the decision to donate. Armitage & Conner (2001b) also reported another study within the same publication where they found that self-efficacy and intentions were independent predictors of behaviour, while attitudes and subjective norms were not. However, it is important to note that Armitage & Conner did not measure actual behaviour, and they were, in fact, reporting behavioural enactment, which referred to a measure of participant's responses on various scenarios.

However, Skoog-Svanberg *et al.* (2003) found the original TPB model successfully *differentiated* between women who were willing, unwilling or unsure to become oocyte donors on all three original components of the TPB (attitudes, subjective norms and perceived behavioural control) (mentioned previously in section 1.2.2). Whereas, Purewal and van den Akker (2006) also used the same translated instrument and using logistic regression, they found all three components of the TPB *predicted* intentions towards oocyte donation among 101 young British women. Some tenets of the theory were therefore put to the test again in this thesis to replicate Skoog-Svanberg *et al.*'s (2003) and Purewal's and van den Akker's (2006) findings and determine the predictive utility of the model in oocyte donation for treatment (Chapter 4) and research (Chapter 5). There were other psychological models (e.g. health belief model) that could have been selected for the purpose of this thesis. However, the TPB was deemed most appropriate because it allowed for comparisons with previous research in oocyte donation and donation behaviour in general. Also, there is some evidence to suggest the TPB may be among the best health models available. For example, Garcia and Mann (2003) examined the ability of several

social cognitive models (health belief model, TPB, theory of reasoned action, health action process approach) to predict intention to resist dieting and perform breast self exam. They found the TPB was among the most effective at predicting intentions to perform both behaviours.

In short, despite some of the shortcomings identified in the literature relating to the TPB, there is some evidence to suggest the TPB is a promising model which could provide an understanding of the psychological processes involved in oocyte donation. In addition to the TPB, this thesis also employed the Interpretative Phenomenological Analysis (IPA) approach. The IPA is perhaps one of the few qualitative psychological approaches that can be used in conjunction with the TPB and is described in the section below.

#### ***1.2.6.2 Interpretative Phenomenological Analysis***

Interpretative Phenomenological Analysis (IPA) (Smith, 1996; Smith, Jarman and Osborn, 1999; Smith and Osborn, 2003, 2004, 2008; Smith and Eatough, 2006) is rooted in phenomenology and hermeneutic enquiry. Phenomenology is a philosophical construct that is concerned with subjective experiences and how the world is experienced by human beings. Hermeneutics is concerned with understanding and interpreting other people's perspectives. According to Smith and Eatough (2006) therefore, the IPA is the "analysis of how individuals make sense of their lived experiences" (pp 325). In order to achieve this, IPA requires interpretative work from the researcher and recognises that research is a dynamic process. Smith (1996) describes this process as 'double hermeneutic' because the researcher is trying to make sense of the participant, who is making sense of his or her experiences. Human beings are not seen as passive perceivers but as active interpreters of the world around them (Brocki and Wearden, 2006).

IPA is an idiographic approach that offers a systematic approach to understand and interpret the 'lived' experiences of participants (Smith and Osborn, 2007). The approach is idiographic because it aims to generate rich and detailed descriptions of the phenomenon under investigation and data is integrated at a later stage of the research (Smith, Harre and van Langenhove, 1995). The focus of IPA is on in-depth analysis, which means it is well suited to investigate novel or sensitive areas (Brewer, Eatough, Smith, Stanley, Glendinning and Quarrell, 2008), in this case oocyte donation. IPA is a technique that can be used to develop theories, models and explanations (Fadde, 2004). This is the reason why IPA has been used extensively in health psychology to examine various topics of pain (Smith and Osborn, 2007), stroke (Hunt and Smith, 2004), childhood diseases (Brewer *et al.*, 2008), and heart disease (Senior, Smith, Michie and Marteau, 2002). For example, Brocki and Wearden (2006) reviewed 52 articles that had used IPA and concluded IPA is an applicable and useful technique and particularly suited in health psychology research.

IPA is a distinct psychological approach that analyses, interprets and represents peoples' perceptions, cognition, motivations, actions and language. IPA, unlike other qualitative approaches, emphasises the importance of understanding cognitions. IPA focuses on the relationship between what people think (cognition), say (narrative account) and do (behaviour) (Eatough and Smith, 2006) and is allied with cognitive psychology (Chapman and Smith, 2002). According to Smith (1996), IPA underpinnings share many similarities with cognitive models such as the TPB. For example, both approaches are interested in the psychological processes involved in determining a behaviour or physical state. In addition, Smith (1996) believed the IPA can be used in collaboration in any particular research project using quantitative and qualitative research approaches. Specifically,

*'quantitative research can operate at a macro level, constructing broad models...qualitative research will work at the micro level, exploring the content of particular individuals' beliefs and responses and illuminating the processes operating within the model'* (pp 265).

It is for this reason that Clare (2003) argued IPA is potentially compatible with traditional quantitative approaches and was chosen as the theoretical model that will underpin the qualitative segments of this thesis. IPA differs from other qualitative traditions (Smith, 1996) and was deemed more appropriate to this thesis than other approaches. For example, IPA is different to discursive research because the focus is not limited to the situated linguistic interaction between the researcher and participant (Smith *et al.*, 1999). IPA does incorporate the importance of language in shaping perceptions and making sense of the lived experiences, but is not restricted to discursive analyses (Eatough and Smith, 2006). Further, unlike grounded theory, IPA can be used in research that is already informed by theory. Due to IPA's strong emphasis on cognition and flexibility, it has also been used in studies that have been underpinned by cognitive theories such as the TPB (e.g. Wyer, Earll, Joseph and Harrison, 2002).

However, there are some disagreements about IPA's utility. Willig (2001) for example critically argued that IPA's focus on cognition may not be compatible with phenomenology, which generally does not include cognitive elements. In addition, Willig (2001) suggested IPA's conceptualisation of language is flawed because according to Willig, language does not 'constitute the means by which we can think and feel; rather, language prescribes what we can think and feel' (pp 63). IPA has also been criticised for not providing researchers with enough guidance on the extent to which researchers should

interpret the narrative accounts as the interview proceeds, and the extent to which these interpretations should be shared with the participants and not for being suitable for focus group data (Brocki and Wearden, 2006). The aims of Brocki's and Wearden's review was to examine how well studies adhered to IPA theoretical foundations and procedures. However, the IPA is not a prescriptive model, although suggestions to guide researchers in data analyses are provided (Smith *et al.*, 1999). Thus, Brocki and Wearden should not be surprised by the differences found between the studies they reviewed. Further, Smith, Jarman and Osborn (1999) pointed out that 'however systematically a qualitative method is presented, the crucial part of the analysis remains the particular interpretative analysis the investigator brings to the text' (pp 238). It is unknown whether Smith *et al.* were responding to the criticism levied at their approach. However, although their remarks are certainly true, a clear presentation of the approach (but not prescriptive) would no doubt aid researchers in the interpretative process.

Since the aim of this thesis was to utilise a number of research methodologies and theoretical approaches to underpin the research, the IPA was deemed to be a useful methodology for the qualitative studies in informing (chapter 4) and consolidating (chapter 7) the quantitative research (chapter 5 & 6). IPA was chosen because the theoretical underpinning would be compatible with the TPB. In summary, the IPA is a useful approach that can be used to understand and interpret the subjective experiences of participants and has the potential to provide a detailed understanding of various factors relating to oocyte donation. The third and final theoretical approach which was employed in this thesis was the framing effect (based upon the Prospect Theory). This is described in the section below.

### ***1.2.6.3 Prospect Theory***

Another limitation of oocyte donation research is the lack of experimental or intervention designed investigations. This is a serious shortcoming, particularly in consideration of the scarcity of volunteer oocyte donors and the notable lack of work done to change attitudes of women from the general population. Previous studies have applied the framing effect to organ donation with some success (e.g. Reinhart, Marshall, Feeley and Tutzauer, 2007) and there is the potential for the same application to oocyte donation. The framing effect is based on the Prospect theory (Kahneman and Tversky, 1979) that predicts different preferences for equivalent outcomes that are framed either positively (as gains) or negatively (as losses). Kahneman and Tversky (1981) examined participant's responses to a hypothetical epidemic, Asian flu. Participants had to choose between two options: Option A – save 200 people for sure (sure option) and option B - save all 600 people with a probability of one out of three, or nobody will be saved (risky option). Option A & B were framed positively as gains. Another group of participants were presented with negatively framed options as losses: participants had to choose between Option C - 400 people will die for sure (sure option) or option D - all 600 will die with a probability of two out of three, or nobody will die (risky option). All options offer equivalent contingencies, thus there should not be any systematic preference. However, Kahneman and Tversky found that participants were more risk averse in the positively framed condition (72% of the participants preferred the sure option) whereas, participants were more risk seeking in the negatively framed condition (78% of participants preferred the risky option). These results indicated that the presentation of information as gain or losses can be powerful and could potentially influence people's preferences and decision making processes.



Replication attempts of the Asian flu experiment have produced a framing effect smaller than one documented by Kahneman and Tversky, yet the framing effect has spawned numerous literatures (Druckman, 2001). Kuhberger (1998) completed a meta-analysis on 136 framing studies and concluded that framing is a reliable phenomenon. The framing effect has been utilised over the years on a number of health campaigns (e.g. Bannon and Schwartz, 2006; Sherman, Mann and Updegraff, 2006) and even functional magnetic resonance imaging studies have revealed a neurophysiological basis to framing (De Martino, Kumaran, Seymour and Dolan, 2006; Tom, Fox, Trepel, and Poldrack, 2007). Rothman and Salovey (1997) argued that the framing effect is modified by the type of health related behaviour and the perceived risk involved. Loss frames have been shown to be more effective in promoting health detection behaviour (e.g. self examination) because detection behaviour is perceived to be risky. Whereas, gain frames has been shown to be effective in prevention behaviour which is perceived to be safe and promotes certainly. (O'Connor, Ferguson and O'Connor, 2005). There has been empirical work supporting these assertions (Hadden and Delhomme, 2006; Chang, 2007; Lorez, 2007). Prevention behaviours such as doing exercise (Robberson and Rogers, 1988) and using sunscreen (Rothman, Salovey, Antone, Keough and Martin, 1993; Detweiler, Bedell, Salovey, Pronin and Rothman, 1999) are best promoted by using the gain framed message and detection behaviours such as screening for breast cancer (Banks, Salovey, Greener, Rothman, Moyer, Beauvais and Epel, 1995; Schneider, Salovey, Apanovitch, Pizarro, McCarthy, Zullo and Rothman, 2001) and skin cancer examinations (Block and Keller, 1995) are best promoted using the loss framed message.

The operationalised terms of risk aversion and risk seeking in message framing do not apply directly to oocyte donation. Women are not performing detection behaviour or prevention behaviour by donating their oocytes. They are essentially expressing an

altruistic act when they donate their oocytes. However, in spite of an apparent lack of relevance, the framing effect has also been shown to be effective in encouraging tissue and organ donation. Reinhart *et al.* (2007) measured the effect of loss and gain message framing on reactions to campaign messages promoting organ donation. In the gain condition participants were exposed to a framed message that highlighted the benefits associated with being a potential donor, whereas in the loss condition participants read a framed message that highlighted the cost associated with not being a donor. They found a main effect for framing: specifically participants assigned to the gain framed message reported more positive reactions and intentions towards organ donation. However, they also found that participants who perceived manipulative intent were less likely to be influenced by the framing conditions. Reinhart *et al.* had conducted three independent studies, however it was unclear whether some of the same participants were used throughout the series of investigations or if (ideally) new participants were recruited. This could have a potential impact on the results, particularly if participants are repeatedly seeing the same message and perceiving manipulative intentions on the part of the researchers. However, these results do concur with other reports that have found gain frames are most effective when benefits to self and others are emphasised positively (Loroz, 2007) and suggest message framing could also be applied to oocyte donation.

A shortcoming with the literature on the framing effect is that the majority of it has been conducted with students under laboratory conditions and many studies have found mixed results (Edwards, Elwyn, Covey, Matthews and Pill, 2001). For example, although, Kuhberger (1998) found the framing effect was robust, he did however note the effect was small to moderate and there was great variation between individual studies. Maule and Villejoubert (2007) argued that Kuhberger's meta-analysis was seriously flawed because he did not distinguish between studies on health detection behaviours and health

prevention behaviours. However, some years before, Edwards *et al.* (2001) did distinguish between the detection and prevention studies. He found that although framing studies in general support the theoretical predictions of gain frames being more effective in promoting prevention behaviour and loss frames better at detection behaviour, the data were insufficient for the findings to be conclusive.

Overall, the framing effect has been found to be a robust phenomenon. However there is a considerable amount of variability in the research literature relating to its efficacy and reliability. The present thesis includes a study designed to further contribute to the literature on the efficacy of framing in an attempt to inform future oocyte donation recruitment (chapter 8). The next section of the introduction chapter will summarise the research problem as identified by the research literature, and present the research aims and objectives of this thesis.

### **1.3 Research Problem & Aims**

#### ***1.3.1 Statement of the research problem***

According to the HFEA (1998b), voluntary oocyte donation is the preferred type of donation and meets all of HFEA's requirements of oocyte donation being an altruistic act, which is voluntarily given and without any financial payment. However, there is an acute shortage of volunteer donors in the UK. Therefore, the aims of this thesis are to address the shortage of volunteer donors through investigating women's attitudes towards various aspects of oocyte donation, and their willingness to become an oocyte donor, using a diversity of methodological traditions and techniques. A total of five studies were designed and conducted using a triangulation approach, which incorporated quantitative, qualitative and experimental methods to investigate attitudes towards oocyte donation and reasons for

parenthood. First, the research problem and aims of each individual study will be presented, followed by a statement of the thesis research aims and objectives.

#### *Study 1 (chapter 4)*

There are only a limited number of studies that have focused on non-Western women's perceptions of parenthood and the majority of the research literature has focused on White, middle class women (Bhopal, 1998; Liamputtong *et al.*, 2004). Women from other ethnic groups have generally been ignored and this is a serious limitation in view of the huge numbers of ethnically diverse populations whom are now fully acculturated across all Western societies. For example, the latest EU report (2004) estimated that the number of non-nationals living in the European Union was over 21 million, which represented 4.8% of the population. Further, Murray and Golombok (2000) found there was an acute shortage of other ethnic donors in the UK, particularly from South Asian ethnic communities. So, in order to address this inequality in research and to meet the needs of large numbers of non-White couples seeking fertility health care services, this thesis aims to promote an increased understanding relating to ethnic differences, the meaning of parenthood and the importance of genetic ties in families created through third party involvement, which is currently underrepresented in the family research literature. The aims of study 1 were therefore to qualitatively assess the meaning of parenthood of post modern British individuals of different ages, gender, ethnic backgrounds and parity using Interpretative Phenomenological analysis. The data gathered from the study were used to interpret and inform the findings obtained from quantitative studies in the thesis, which relate to the link between oocyte donation and parenthood.

### *Study 2 (chapter 5)*

Oocyte donor's views of parenthood appear to be an alternative to the traditional parenthood discourse (Kirkman, 2003; Winter and Daniluk, 2004). In oocyte donation, women allow other women to raise their genetic children and participate in the creation of an unconventional, non-biologic family and they [donors] seem to take pride in this (Rosenberg and Epstein, 1995). Oocyte donors have also been found to not believe in the importance of a genetic link between parent and child (Weil *et al.*, 1994; Ahuja *et al.*, 1998; Beatens *et al.*, 2000; Byrd *et al.*, 2002; Kirkman, 2003; Winter and Daniluk, 2004) (See Chapter 2 for more details). In addition, oocyte donors not only share untraditional views of parenthood, they have also been reported to endorse untraditional sex role beliefs and behaviours (Schover *et al.* 1990, 1991; Klock *et al.*, 1999; Riddle Applegarth, Joseph, Grill, Cholst and Rosenwaks, 2003). Tentatively it is possible to suggest that oocyte donation is compatible with oocyte donor's perceptions of parenthood because their perception does not conform to the traditional family ideology. However research is needed to clarify these speculative links. One method to examine the link between oocyte donation and parenthood is to investigate whether women willing to donate their oocytes have unconventional and non-normative reasons for parenthood. The aims of study 2 were therefore to assess women's attitudes towards oocyte donation and their intentions to donate using components of the Theory of Planned Behaviour in order to develop a theoretically based understanding of factors that may influence women's decision to donate. Further, the association between women's intention to donate and their attitudes towards parenthood were also examined.

### *Study 3 (chapter 6)*

Little is known about the psychological and social determinants of oocyte donation for research. To the author's knowledge, no studies have been published that have examined

volunteer donors or patient donors on their attitudes and willingness to donate oocytes for research. The aims of study 3 were therefore to investigate women's attitudes towards oocyte donation for research and their willingness to donate in a general population sample. Components of the Theory of Planned Behaviour and the link between parenthood and willingness to donate were also examined. In effect, this study replicates study 2 reported in chapter 5. However, the crucial difference here related to the implications and outcomes of the donation. In study 2, a genetically related child may be born to another family, whereas in study 3, potential donor's contribution is not tangible. These differences are likely to affect women's potential willingness to donate and their attitudes towards oocyte donation.

#### *Study 4 (chapter 7)*

Similarly, since little is known about the reasons why the majority of women from the general population do not donate their oocytes for treatment or research, this was also addressed in this thesis. There are only a handful of studies that have examined the general populations' attitudes towards oocyte donation and most of these studies have used quantitative measurements (e.g. Kazem *et al.*, 1995; Skoog-Svanberg *et al.*, 2003; Brett *et al.*, 2008). Further, most studies have attempted to find out why women *do* donate, and reasons for not donating are less well understood. Consequently, there is even less described or understood about cultural discourses relating to oocyte donation for treatment and research among women from the general population. The aims of study 4 were therefore to qualitatively assess the meaning of oocytes and oocyte donation for treatment and research for fertile women of child bearing ages using the IPA. Findings from Study 2 and 3 were used to inform this study. Further, case studies from two infertile individuals were also used to provide an illustrative comparison.

### *Study 5 (chapter 8)*

Lastly, there is a notable lack of intervention studies in the oocyte donation literature. Most of the research literature on oocyte donation provides limited suggestions for possible intervention to raise awareness of oocyte donation and attract more volunteer oocyte donors. Past research has shown the framing effect is effective in changing attitudes towards organ donation (Reinhart *et al.*, 2007). The aims of study 5 were therefore to use the framing effect to promote awareness of oocyte donation and examine the effect of gain and loss framed messages on women's willingness to donate their oocytes, in an attempt to inform future recruitment practices.

#### ***1.3.2 Statement of aims & objectives of the research programme described in the following chapters***

1. To measure the psychological determinants of intentions to donate genetic materials and [genetic] parenthood.
2. To investigate the link between donation intentions of genetic materials and attitudes towards parenthood.
3. To evaluate the influence of socio-demographic characteristics and subjective experiences in determining the importance of a genetic link in families created through third party involvement.
4. To use components of the TPB to examine differential attitudes and beliefs in women's potential oocyte donation for treatment and research.
5. To assess the utility of framing messages in women's willingness to donate oocytes for treatment.
6. To use a diversity of methodological traditions to maximise the quality and utility of the research problems.

The next chapter (Chapter 2) describes a systematic review providing the context and published research in the oocyte donation literature. The aims of the systematic review were to integrate the research findings regarding the psychological determinants of oocyte donation and extrapolate women's experiences of donation. It is expected that the pooled evidence will provide a systematic view of oocyte donors and raise important issues relating to oocyte donation which were not covered in the literature review (1.2).



## **2. Chapter 2 Systematic Review of Oocyte Donation: Attitudes, Motivation and Experiences of Donors<sup>3</sup>**

### **2.1 Summary**

The social and psychological factors determining intentions to donate gametes are important for clinics, policy-makers and recruitment campaigns. As was shown in chapter 1, social scientists have been researching oocyte donors since the 1990s, however there is no clear understanding of the factors that influence women's decision to donate. The aims of this systematic review were therefore to integrate the research findings regarding the psychological determinants of (potential) oocyte donation and extrapolate women's experiences of donation. A bibliographic search of English language publications of four computerised databases was undertaken with no time restriction set for publications. A total of 62 studies met the inclusion criteria and were included in the review. The research syntheses revealed there were distinct differences between patient and non-patient (known, commercial, volunteer and potential) donors on demographic characteristics, motives for donation, issues relating to disclosure and attitudes towards the resultant offspring. However, there were also a number of similarities across groups. For example, perceptions of the importance of motherhood and unimportance of genetic ties between parent and child appeared to be an important factor underpinning women's decision to donate which was relevant to most groups. Further, studies have found that a significant proportion of oocyte donors and women from the general population were prepared to donate their oocytes as identifiable donors. Studies which have examined the experiences of donors report positive experiences of oocyte donation. However, differences between donor

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<sup>3</sup> Purewal, S., & van den Akker, O. B. A. (2009). Systematic review of oocyte donation: investigating attitudes, motivations and experiences. Human Reproduction Update. In Press. (Appendix 7).

groups on a range of factors relating to oocyte donation highlight the need for tailored psychosocial evaluation and counselling.

## **2.2 Aims**

The aims of this systematic review were two fold. First, to integrate the findings regarding the psychological determinants and motivational patterns of oocyte donation and second, to draw a coherent picture of women's experiences of donation. It is expected that the pooled evidence will provide a systematic view of oocyte donors which could have implications for public health and guide future research, inform policy and assist in future recruitment.

## **2.3 Materials and Method**

### ***2.3.1 Search strategy, inclusion and exclusion criteria***

A bibliographic search of English language publications in four computerised data bases (PubMed, Science Direct, Swetswise and PsycInfo) was undertaken with no restriction set for time of publication. The keywords oocyte/egg donation, oocyte/egg donor(s), attitudes and psychological/psychosocial were used in all possible combinations. The search was augmented with references cited in primary sources, in review papers (e.g. van den Akker, 2006; Daniels, 2007b; Hudson, Culley, Rapport, Johnson and Bharadwaj, 2008) and hand-searching specialist journals. Studies that examined

- ❖ patients donors (oocyte sharers);
- ❖ non-patients (volunteer, known and commercial donors);
- ❖ Potential patient donors from infertile populations'
- ❖ Potential non-patient donors from the general populations

Demographic characteristics, attitudes, motives and experiences of oocyte donation for treatment of others (where relevant) were eligible. Although the focus of this systematic

review was on women, inevitably some of the studies had included men in their samples and they were also accepted. All study methodologies were accepted (e.g. quantitative, qualitative or case studies). Studies that have focused on recipient couples, donor offspring, practitioner's or researcher's attitudes towards oocyte donation were not included because the focus of this review is on oocyte donors or potential oocyte donors. Articles on oocyte donation for research were excluded because of the small number of papers on this topic and papers on embryo donation were also excluded because there is compelling evidence that asserts there are distinct differences in people's perceptions of embryos and oocytes (e.g. Söderström-Anttila, Foudila, Ripatti and Sieberg, 2001b; Kirkman, 2003; Roberts and Throsby, 2008). Studies which met the eligibility criteria were comprehensively examined and necessary information was abstracted from each paper, tabulated and then analysed.

## **2.4 Search Results**

The studies titles of 8262 records were initially screened and the majority of the records were medical/embryological papers or duplication of papers. Of these 8262, the abstracts of 3346 potentially relevant records were reviewed and this led to the exclusion of any research articles that were not relevant. Once again the majority of these papers were not relevant to this review (e.g. duplication in the searches, medical/embryological papers, papers focused on sperm donors or donor recipients/offspring or only fleetingly covered oocyte donation). Of the 3346 abstracts, full texts of 153 records were reviewed and 62 met the inclusion criteria and were included in the research syntheses as a consequence. Of the remaining 91 records which were rejected, 29 records were reviews, commentaries, opinions or letters, 61 records were not relevant (e.g. medical, sperm donors, donor recipients/offspring or practitioner/researcher focused articles) and two were rejected

because they were deemed poor quality. The screening process is summarised in the study flow chart (Fig 2.4.1).

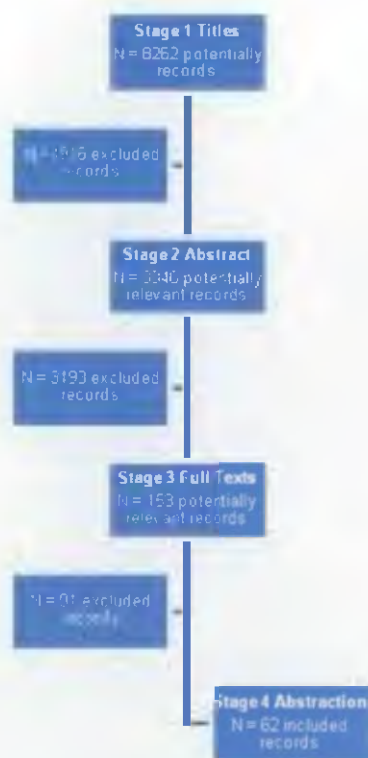


Figure 2.4.1: Screening process throughout review

### 2.4.1 Results

There was considerable variation in research question, methodology and study design, quality, sample and sample size and outcome measurement between the 62 studies included in the systematic review. Despite this, it was possible to extrapolate clear patterns and trends between studies. These central issues which emerged are discussed below and where possible, distinctions between donor groups (patient, non-patient and potential donors) will be made. The results section consists of eight sub-sections. First, methodological aspects of the studies will be reviewed (2.4.2). Second, the results of studies on potential donors from general and patient populations' attitudes towards oocyte donation are discussed, which form the context to which donation takes place (2.4.3). Third, the socio-demographic profiles of actual and potential donors reported in the studies

are presented (2.4.4), followed by sections on studies of donors' and potential donors' perceptions of oocytes and the importance of genetic ties (2.4.5) and their motivation for [potential] oocyte donation (2.4.6). The final sections focus on factors relevant for policy and health care service. Specifically, studies which have addressed issues relating to disclosure & anonymity (2.4.7); attitudes towards donor offspring and recipient couples (2.4.8); and experiences of the oocyte donation procedure (2.4.9) will be reviewed.

#### ***2.4.2 Methodological considerations***

The study characteristics of the 62 included articles can be found in Table 2.4.1. The table is organised alphabetically on author's country of origin and includes key features on sample details, study methodology and time of assessment, which provide important contextual information. Individual study results are not presented on the table because they are discussed in detail in the result section.

##### ***2.4.2.1 Country of origin***

As mentioned before in the introduction chapter (section 1.2.1.3), oocyte donation practice varies across country to country, and this will have an inevitable impact on the research output and create some divergence within the oocyte donation literature. As can be seen from table 2.4.1, authors from 12 different countries have contributed to the psychological assessment of oocyte donation and, with the exception of Turkey, all these countries permit oocyte donation. However, the majority of these studies were conducted either in the US (21/62) or the UK (20/62), thus resulting in an over-representation of White Western ideology and interpretation of what is a global phenomena [oocyte donation]. Moreover, a substantial percentage of the research output from the US has involved commercial donors and data from commercial donors may not be easily generalised into other donor groups.

Most European countries do not practise commercial donation which further limits the applicability of the findings from these studies.

Table 2.4.1: Study characteristics

Authors, Year of Publication & Country	Sample	Method	Time of Assessment (Pre/post-donation)
1. Urdapilleta, Chillik & Fernández (2001)/ Argentina	55 infertile patients on waiting list for oocyte donation (women mean age 40 yrs, men mean age 39.6); 35 infertile patients who can use their own oocytes (women mean age 33.8 yrs, men mean age 36.9, 31-47); and 67 fertile participants (women mean age 34.6, men mean age 38.8). <i>Response rate unknown.</i>	Questionnaires <sup>b</sup>	N/A
2. Kirkman (2003)/ Australia	16 known and volunteer oocyte donors and 21 recipients. <i>Response rate N/A.</i>	Interviews using narrative analysis	Post-donation (time since donation unknown)
3. Warren & Blood (2003)/ Australia	29 known donors (age range from 18 to 39). <i>Response rate of 26%.</i>	Questionnaires <sup>b</sup>	Post-donation (women had donated between 1997 to 2000)
4. Beatens, Devroey, Camus, van Steirteghen & Ponjaert-Kristofferse (2000)/ Belgium	144 known oocyte donors (mean age 30, range 17 to 42) and 144 recipients (mean age 35, range 22 to 51). <i>Response rate N/A.</i>	Psychological interviews	Pre-donation
5. Khamisi, Endman, Lacanna & Wong (1997)/ Canada	10 known oocyte donors (mean age 29, range 21 to 34) and 10 recipients (mean age 40, range 30 to 49).	Psychological interviews	Pre-donation

	<i>Response rate N/A.</i>		
6. Winter & Daniluk (2004)/ <i>Canada</i>	3 known oocyte donors. <i>Response rate N/A.</i>	Interviews using narrative analysis	Post-donation (donor offspring were aged between 2 to 3 years at time of interview)
7. Yee, Hitkari & Greenblatt (2007)/ <i>Canada</i>	13 known oocyte donors (mean age 33, range 22 to 40 yrs). <i>Response rate of 76%.</i>	Questionnaires <sup>b</sup>	Post-donation (women had donated during 2000 to 2005)
8. Söderström-Anttila (1995)/ <i>Finland</i>	27 volunteer oocyte donors (mean age 29.5, range 24 to 36). <i>Response rate of 90%.</i>	Questionnaires <sup>b</sup>	Post-donation (women had donated between 12 to 18 months at time of study)
9. Raoul-Duval, Letur-Konirsch & Frydman (1992)/ <i>France</i>	32 volunteer oocyte donors and 32 recipient couples. <i>Response rate N/A.</i>	Psychological interviews	Pre-donation
10. Weil, Cornet, Sibony, Mandelbaum & Salat-Baroux (1994)/ <i>France</i>	41 volunteer donors and 69 known donors (mean age 33). <i>Response rate N/A.</i>	Psychological interviews	Pre-donation
11. Chliaoutakis (2002)/ <i>Greece</i>	180 males and 185 females from general population. (mean age 30). <i>Response rate unknown.</i>	Structured interviews <sup>b,d</sup>	N/A
12. Chliaoutakis, Koukouli & Papadakaki (2002)/ <i>Greece</i>	180 males and 185 females from general population. (mean age 30). <i>Response rate unknown.</i>	Structured interviews <sup>b,d</sup>	N/A
13. Bharadwaj (2003)/ <i>India</i>	43 infertile patients and clinicians ( <i>n</i> unknown). <i>Response rate N/A.</i>	Interviews <sup>a</sup>	N/A
14. Khalili, Isikoglu & Ghasemi (2006)/ <i>Iran</i>	100 Christians (49% female) and 100 Muslims (94% female). <i>Response rate unknown.</i>	Questionnaires <sup>b</sup>	N/A
Shaw (2007)/ <i>New Zealand</i>	2 known oocyte donors and 12	Interviews using narrative analysis	Post-donation (time since donation

	volunteers donors. <i>Response rate N/A.</i>		unknown)
16. Skoog-Svanberg, LampicBergh & Lundkvist. (2003a)/ Sweden	724 women from the general population (mean age 28.9). <i>Response rate of 73%.</i>	Questionnaires	N/A
17. Skoog-Svanberg, LampicBergh & Lundkvist. (2003b)/ Sweden	729 women (mean age 28.9) & 556 men (mean age 31.3) from general population. <i>Response rate of 73% for women and 56% for men.</i>	Questionnaires	N/A
18. Westlander, Janson, Tagnfors & Bergh (1998)/ Sweden	50 IVF patients; 62 investigating infertility problem; 50 attending maternity unit after delivery; 50 attending family clinic for therapeutic abortion; and 44 Turner Syndrome. <i>Response rate unknown.</i>	Questionnaires <sup>b</sup>	N/A
19. Baykal, Korkmaz, Ceyhan, Goktolga & Baser (2008)/ Turkey	368 infertile women (mean age 30 yrs). <i>Response rate unknown.</i>	Questionnaires <sup>b</sup>	N/A
20. Isikoglu, Senol, Berkkanoglu, Ozgur, Donmez & Stones-Abbasi (2006)/ Turkey	232 females (mean age 34) and 168 males (mean age 34) from general population. <i>Response rate of 100%.</i>	Questionnaires <sup>c</sup>	N/A
21. Ahuja, Mostyn & Simons. (1997)/ UK	107 patient and volunteer oocyte donors and 110 women enquiring about oocyte donation <i>Response rate of 28.9%.</i>	Questionnaires <sup>b,c</sup>	Post-donation/Post-enquiry (time since donation or enquiry unknown)
22. Ahuja, Simons, Mostyn & Bowne-Mpkins (1998)/	114 patient oocyte donors. <i>Response rate of</i>	Questionnaires <sup>b</sup>	Post-donation (women had donated between



UK	42%.		1993 to 1997)
23. Baluch, Fallone, Anderson, Furnham, Aghssa (1994)/ UK & Iran	25 infertile British women (mean age 30) and 50 fertile British women (mean age 21); 50 infertile Iranian women (mean age 27) and 50 fertile women (mean age 21). <i>Response rate unknown.</i>	Questionnaires <sup>b</sup>	N/A
24. Blyth (2004)/ UK	20 infertile women and 18 husbands/partners (22 were patient oocyte donors and 16 were not). <i>Response rate N/A.</i>	Interviews <sup>a</sup>	Post-donation/post-enquiry (time since donation or enquiry unknown)
25. Bolton, Golombok, Cook, Bish & Rust (1991)/ UK	53 Infertile patients receiving oocyte donation; 134 infertile patients receiving donor insemination; 168 potential patient donors; and 44 general population control group (190 men and 290 women were in the sample. however the gender ratio in each group is unknown). <i>Response rate of over 80% - response rate of individual groups not specified.</i>	Questionnaires	N/A
26. Brett, Sacranie, Thomas & Rajkhowa (2008)/ UK	143 females from general population (mean age 40). <i>Response rate of 33%.</i>	Questionnaires <sup>b</sup>	N/A
27. Byrd, Siderbotham & Lieberman (2002)/ UK	14 known and 99 volunteer oocyte donors (mean age 31.7, range 22 to 36). <i>Response rate of 86%.</i>	Questionnaires <sup>b,c</sup>	Post-donation (time since donation unknown)

28. Craft, Flyckt, Heeley, Layland, Thomhill & Kelada (2005)/ UK	504 oocyte donors and 363 recipients. <i>Response rate of 32.7% for donors and 39.1% for recipients.</i>	Questionnaires <sup>b</sup>	Post-donation (women had donated between 1986 to 2003)
29. Culley, Hudson, Johnson, Rapport & Katbamna (2007)/ UK	67 women and 10 men from British South Asian background. <i>Response rate N/A.</i>	Focus Groups using thematic analysis	N/A
30. Fielding, Handley, Duqueno, Weaver & Lui (1998)/ UK	39 known and volunteer oocyte donors (mean age 31 years) and 34 sperm donors (mean age 23 years). <i>Response rate of 57.3% for oocyte donors and 100% for sperm donors.</i>	Questionnaires <sup>b</sup>	Post-donation (women had donated between 1992 to 1996)
31. Frith, Blyth & Farrand (2007)/ UK	75 oocyte donors (donor type unknown) and 43 sperm donors. <i>Response rate unknown.</i>	Questionnaires <sup>b,c</sup>	Post-donation (time since donation unknown)
32. Kailasam, Skes & Jenkins (2001)	428 men and women from the general population. <i>Response rate unknown.</i>	Questionnaires <sup>b</sup>	N/A
33. Kan, Abdalla, Ogunyemi, Korea & Latache (1998)/ UK	145 volunteer oocyte donors (mean age 31.2) and 356 non-donors (enquired but did not donate) (mean age 30.1) <i>Response rate of 39.1% for oocyte donors and 50.4% for non-donors.</i>	Questionnaires <sup>b</sup>	Post-donation (women had donated during 1988 to 1995)/post-enquiry (women had enquired during 1994 to 1995)
34. Kazem, Thompson, Hamilton & Templeton (1995)/ UK	Females (97 fertile; 113 infertile; 20 recipient mothers; and 28 oocyte donors) and Males (25 fertile; 75 infertile; 17	Questionnaires <sup>b</sup>	Unknown for oocyte donors and N/A for fertile and infertile participants

	recipient). <i>Response rate of 93.4% for the donor group; 89.7% for fertile group; 94.4% for the infertile group and 92.5% for the recipient groups.</i>		
35. Kirkland, Power, Burton, Baber, Studd & Abdalla (1992)/ UK	20 volunteer and 15 patient donors (mean age 31.2, range 22 to 35) and 50 recipients (mean age 35.7, range 25 to 48). <i>Response rate of 100%.</i>	Questionnaires <sup>b,c,e</sup>	Post-donation (women had donated between 1988 to 1989)
36. Lyall, Murray, Glasier & Baird, 1995/ UK	870 women attending a family planning centre (age range 15 to 65), 160 women attending an abortion clinic (age range 14 to 42) and 180 women attending a fertility clinic (age range 19 to 42). <i>Response rate of 76% for women attending family planning centre, 80% attending abortion clinic and 75% attending infertility clinic.</i>	Questionnaires <sup>b</sup>	N/A
37. Oskarsson, Dimitry, Mills, Hunt & Winston (1991)/ UK	222 infertile couples (majority were aged between 30 to 40). <i>Response rate of 95%.</i>	Questionnaires <sup>b</sup>	N/A
38. Power, Baber, Abdalla, Kirkland, Leonard & Studd (1990)/ UK	20 volunteer oocyte donors (mean age 30.1, range 22 to 35) and 15 patient donors (mean age 32.3, range 26 to 35). <i>Response rate of 100%.</i>	Questionnaires <sup>b,e</sup>	Post-donation (time since donation unknown)
39. Purewal & van den Akker (2006)/	101 women from general population	Questionnaires <sup>e</sup>	N/A

<i>UK</i>	(mean age 22.3, range 18 to 34). <i>Response rate unknown.</i>		
40. Rapport (2003)/ <i>UK</i>	11 potential patient donors (mean age 28 to 34). <i>Response rate N/A.</i>	Interviews using van Manen's interpretative phenomenological analyses	Pre-donation
41. Snowdon (1994)/ <i>UK</i>	3 volunteer donors and 1 donated to egg pool for friend; 5 recipients; 2 gestational surrogates; 2 commissioning surrogate mothers. <i>Response rate N/A.</i>	Interviews <sup>a</sup>	Post-donation (time since donation unknown)
42. Almeling (2006)/ <i>US</i>	Staffs from 2 egg donation agencies and 1 sperm bank and clinic records of 549 commercial oocyte donors (age range 18 to 34) and 44 commercial sperm donors (age range 19 to 40). <i>Response rate N/A.</i>	Clinic Records on donors and Interviews with clinic staff	N/A
43. Bartlett (1991)/ <i>US</i>	14 infertile women and their 16 prospective known oocyte donors. Control group of 16 infertile women not needing exogenous gametes. <i>Response rate N/A for oocyte donors and unknown for control group.</i>	Oocyte donors & recipients completed psychological interviews and assessments (PSS & SCL-90) and control group only completed PSS & SCL-90	Pre-donation for oocyte donors & recipients; N/A for control group
44. Braverman & Corson (2002)/ <i>US</i>	235 oocyte donors (donor type unknown) (mean age 27.8) and 80 surrogates (mean age 32.7 yrs). <i>Response rate of 48.8% for oocyte donors and 48.3%</i>	Questionnaires <sup>b</sup>	Post-donation (donated or surrogated within 14 months at time of study)

	<i>for surrogates.</i>		
45. Greenfeld, Mazure, Olive & Keefe (1995)/ US	49 prospective commercial oocyte donors (mean age 27.3) and 26 prospective known donors (mean age 37.5). <i>Response rate N/A.</i>	Psychological interviews	Pre-donation
46. Jordan, Belar & Williams (2004)/ US	24 volunteer oocyte donors (mean age 26.5, range 21 to 35). <i>Response rate of 44%.</i>	Questionnaires <sup>b</sup>	Post-donation (women had donated between 1997 to 1999)
47. Kalfoglou & Geller (2000a)/ US	11 known and 22 commercial oocyte donors and 6 prospective oocyte donors (donor type unknown) (age range 21 to 36). <i>Response rate N/A.</i>	Interviews <sup>a</sup>	Pre-donation (for 6 women preparing to donate) and post-donation (for former donors, donated within 3 years at time of study)
48. Kalfoglou & Geller (2000b)/ US	11 known and 22 commercial oocyte donors and 6 prospective oocyte donors (donor type unknown) (age range 21 to 36). <i>Response rate N/A.</i>	Interviews <sup>a</sup>	Pre-donation (for 6 women preparing to donate) and post-donation (for former donors, donated within 3 years at time of study)
49. Kalfoglou & Gittelsohn (2000)/ US	11 known and 22 commercial oocyte donors and 6 prospective oocyte donors (donor type unknown) (age range 21 to 36). <i>Response rate N/A.</i>	Interviews <sup>a</sup>	Pre-donation (for 6 women preparing to donate) and post-donation (for former donors, donated within 3 years at time of study)
50. Klock, Braverman & Rausch (1998)/ US	25 commercial donors (mean age 27.56, range 21 to 34). <i>Response rate N/A.</i>	Psychological interviews and assessments (PAI, STAI; SE; Donor Ambivalence Scale; PRAIS) and post donation satisfaction questionnaire <sup>e</sup>	Pre and 2 week post-donation (2 weeks after donation)
51. Klock, Stout & Davidson (1999)/ US	150 prospective commercial oocyte donors (mean age 25.3 years).	Psychological interviews and assessments (MMPI)	Pre-donation

	<i>Response rate N/A.</i>		
52. Klock, Stout & Davidson (2003)/ US	52 commercial oocyte donors (mean age 27). <i>Response rate of 45.2%.</i>	Questionnaires (SE; BSI; Donor Ambivalence Scale; satisfaction and attitudes towards oocyte donation questionnaire <sup>b</sup>	Post-donation (women donated between 3 to 18 months at time of study)
53. Lessor, Reitz, Balmaceda & Asch (1990)/ US	501 males and females from the general population. <i>Response rate of 50%.</i>	Structured interviews <sup>b,d</sup>	N/A
54. Lessor, Cervantes, O'Connor, Balmaceda & Asch (1993)/ US	95 prospective commercial oocyte donors (mean age 26). <i>Response rate N/A.</i>	Psychological interviews and assessments (MMPI)	Pre-donation
55. Lindheim, Chase & Sauer (2001)/ US	380 prospective commercial oocyte donors (mean age 26.2) who received \$2500 for donation and 157 oocyte donors (mean age 26.7) who received \$5000 for donation. <i>Response rate of 57% for oocyte donors receiving \$2500 and 30.5% for donors receiving \$5000.</i>	Psychological Interviews and questionnaire	Pre-donation
56. Patriek, Smith, Meyer & Bashford (2001)/ US	24 commercial oocyte donors (mean age 24, range 19 to 33). <i>Response rate of 48%.</i>	Questionnaires <sup>b</sup>	Post-donation (women had donated between 1993 to 2000)
57. Rosenberg & Epstein (1995)/ US	32 commercial oocyte donors (mean age 25.6, range 21 to 35). <i>Response rate of 43%.</i>	Questionnaires <sup>b</sup>	Post-donation (women had donated between 1992 to 1994)
58. Sauer & Paulson (1992)/ US	33 prospective known and 17 commercial oocyte donors (mean age 31.7, range 24 to 40).	Psychological interviews <sup>c</sup>	Pre-donation

	<i>Response rate N/A.</i>		
59. Schover, Reis, Collins, Blankstein, Kanoti & Quigley (1990)/ US	26 prospective commercial oocyte donors (mean age 29, range 19 to 35) and 43 matched-control participants (mean age 29, range 18 to 35). <i>Response rate N/A for oocyte donors and unknown for control group.</i>	Prospective donors completed psychological interviews and assessments (CPI; MMPI; SCL-90) and control completed questionnaire on reproductive traumas and family turmoil <sup>b</sup>	Pre-donation for prospective oocyte donors; N/A for control
60. Schöver, Collins, Quigley, Blankstein & Kanoti (1991)/ US	45 prospective commercial oocyte donors (mean age 28.7, range 19 to 35). <i>Response rate N/A for pre-donation and 96% for actual donors.</i>	45 prospective donors completed psychological interviews and assessments (SCL-90 & MMPI) and 23 actual donors completed follow-up questionnaire <sup>b</sup>	Pre and post-donation (women had donated between 6 to 12 months at time of study)
61. Schover, Rothmann & Collins (1992)/ US	45 prospective commercial oocyte donors (mean age 28.7) and 17 sperm donors (mean age 28.5). <i>Response rate N/A.</i>	Psychological interviews and assessments (MMPI)	Pre-donation
62. Zweifel, Rathert, Klock, Walaski, Pritts, Olive & Lindheim (2006)/ US	32 commercial oocyte donors (mean age 26.3). <i>Response rate N/A.</i>	Research questions were asked during the Psychological interviews.	Pre-donation and post donation (immediately afterwards).

Note: Table is organised alphabetically on country of origin; <sup>a</sup> = qualitative research methodology used without a theoretical approach; <sup>b</sup> = use of unstandardised questionnaires or no reported information on measurement's validity and reliability; <sup>c</sup> = data analyses did not distinguish between donor groups; <sup>d</sup> = responses from structured interviews were converted into quantitative data; <sup>e</sup> = questionnaire modified/translated from existing questionnaire; BSI = Brief Symptoms Inventory; CPI = California Personality Inventory; SCL-90 = Hopkins Symptom Checklist-90; MMPI = Minnesota Multiphasic Personality Inventory; PAI = Personality Assessment Inventory; PSS = Perceived Stress Score PSS; PRAIS = Pennsylvania Reproductive Associates Infertility Scale; SE = Rosenberg Self-Esteem Scale; STAI = State-Trait Anxiety Inventory.

Additionally, the majority of the studies that have examined the psychological profile of actual and potential oocyte donors have also stemmed from the US and relate specifically to commercial donors (e.g. Schover, Reis, Collins, Blankstein, Kanoti and Quigley, 1990; Schöver, Cervantes, O'Connor, Balmaceda and Asch, 1993; Klock, Stout and Davidson,

1999, 2003; Lindheim, Chase and Sauer, 2001) and research into the psychological profile of patient, volunteer, known and potential oocyte donors is limited. There are legitimate constraints therefore to how much the data from the US can be inferred and generalised to other populations, which needs to be taken into account when reading this systematic review. Studies from the UK have included a more balanced representation of patient, volunteer, known and potential oocyte donors (commercial donation is not practiced in the UK). However, most of the UK studies are retrospective, whereas US studies are more diverse and have utilised prospective and retrospective research designs, which provides a more fluid and complete perspective of oocyte donation and oocyte donors.

#### *2.4.2.2 Research design*

Studies on oocyte donation have used a healthy combination of questionnaires or interview research designs; however other methodologies (e.g. experimental designs) have largely been ignored. Additionally, as shown in the table 2.4.1, some of the studies which have used qualitative research methodologies have not used a theoretical approach to analyse their data (e.g. Snowdon, 1994; Kalfoglou and Geller, 2000a, b; Blyth, 2004) and no qualitative work has been done on potential volunteer or commercial oocyte donors. There was a relatively even distribution of studies that have examined patient, volunteer, commercial, known and potential oocyte donor's attitudes and motivation towards oocyte donation. However, it is important to note that not all studies have reported 'donor type' or distinguished between the groups in data analyses (e.g. Sauer and Paulson, 1992; Ahuja, Mostyn and Simons, 1997; Byrd, Siderbotham and Lieberman, 2002; Frith, Blyth and Farrand, 2007). Furthermore, some of the sample sizes of the studies reviewed were relatively small. For example, Yee, Hitkari and Greenblatt (2007) reported a quantitative study on 13 known oocyte donors. Studies on general populations however generally report more substantial participant numbers (e.g. Kailasam, Sykes and Jenkins, 2001;



Skoog-Svanberg, LampicBergh and Lundkvist, 2003b), but not always (e.g. Purewal and van den Akker, 2006; Brett, Sacranie, Thomas and Rajkhowa, 2008).

The research literature also includes a wealth of studies from psychological interviews and psychometric assessments which were done to assess the suitability of candidates for oocyte donation (e.g. Schover *et al.* 1990, 1991, 1992; Bartlett, 1991; Beatens, Devroey, Camus, van Steirteghen and Ponjaert-Kristofferse, 2000; Klock *et al.*, 1999). However, an inherent problem with these studies is that it is highly likely donors will be 'impression managing' the responses they provide because they are aware they can be rejected from the oocyte donation program with their performance at these assessments (Kalfoglou and Geller, 2000b). Thus, there may be some degree of social desirability bias in the studies that have reported psychological assessments. As shown by the table 2.4.1, other studies have used research questionnaires to assess oocyte donor's attitudes and experiences of the donation procedure post-donation (e.g. Rosenberg and Epstein, 1995; Fielding, Handley, Duqueno, Weaver and Lui, 1998; Warren and Blood, 2003; Yee, Hitkari and Greenblatt, 2007). Although certain biases are minimised (e.g. social desirability responding), problems with some of these studies have been that they have used no standardised or validated questionnaires and most do not report reliability or validity values for their questionnaires (see table 2.4.1 for the identities of these specific studies). In addition, with exception of some studies (e.g. Kirkland, Power, Burton, Baber, Studd and Abdalla, 1992; Skoog-Svanberg, LampicBergh and Lundkvist, 2003a,b; Purewal and van den Akker, 2006; Isikoglu, Senol, Berkkanoglu, Ozgur, Donmez and Stones-Abbasi, 2006), the outcome measurements that have been used are all different. Thus some of the differences reported in the systematic review may be attributable to differences in the questions asked, however this will be discussed in more detail in subsequent sections.

#### **2.4.2.3 Response rates**

Response rates for questionnaire studies were reasonably good and exceeded 70% in some studies (e.g. Kazem *et al.*, 1995; Söderström-Anttila, 1995; Bryd *et al.*, 2002; Yee *et al.*, 2007), and were high as 100% in others (e.g. Power *et al.*, 1990; Kirkland *et al.*, 1992). This suggests that the findings from these studies can be generalised with a certain degree of confidence (see table 2.4.1 for response rates). However, some studies have reported response rate as low as 30% (e.g. Kan *et al.*, 1998; Ahuja *et al.*, 1997; Warren and Blood, 2003; Craft *et al.*, 2005), which may reflect poor recruitment strategy and limits the generalisability of their findings. However, data on response rates were not reported in a number of studies and it is interesting to note that many of those studies were with potential donors (e.g. Urdapilleta *et al.*, 2001; Chliaoutakis, 2002; Chliaoutakis *et al.*, 2002; Khalili *et al.*, 2006; Purewal & van den Akker, 2006).

Overall, the research methodologies of the studies under review are relatively varied and diverse thus ensuring the research syntheses would provide a detailed and enriched description of oocyte donors. The following sections will present some of the findings from these studies. First, general and patient population's attitudes towards oocyte donation will be discussed.

#### **2.4.3 General attitudes towards oocyte donation**

Overall, studies that have assessed women and men from the general population's attitudes towards oocyte donation have generally observed positive attitudes (Lessor, Reitz, Balmaceda and Asch, 1990; Bolton, Golombok, Cook, Bish and Rust, 1991; Kazem *et al.*, 1995; Lyall, Murray, Glasier and Baird, 1995; Westlander, Janson, Tågnfors and Bergh, 1998; Kailasam *et al.*, 2001; Urdapilleta, Chillik and Fernández, 2001; Chliaoutakis, 2002;

Skoog-Svanberg *et al.*, 2003a; Isikoglu, Senol, Berkkanoglu, Ozgur, Donmez and Stones-Abbasi, 2006; Khalili, Isikoglu and Ghasemi, 2006; Brett *et al.*, 2008; Purewal and van den Akker, 2008). In fact, Lyall *et al.* (1994) found that support was exceptionally high and that donated oocytes from live donors, cadavers and even fetuses for fertility treatment [and research] were considered to be acceptable among fertile and infertile women, although women undergoing an abortion were less supportive of using cadavers. Furthermore, a preference for oocyte donation over adoption has been reported (Urdapilleta *et al.*, 2001; Isikoglu *et al.*, 2006; Khalili *et al.*, 2006) with one study reporting that in oocyte donation the preference would maintain at least partial genetic ties. However some studies have also noted that knowledge of oocyte donation was often low (Chliaoutakis *et al.*, 2002; Isikoglu *et al.*, 2006; Khalili *et al.*, 2006; Baykal *et al.*, 2008), particularly among the fertile populations (Kazem *et al.*, 1995). Knowledge about oocyte donation may also be related to their country's legislation regarding assisted reproductive practice. For example, in Turkey, gamete donation is not permitted, which might explain the low levels of awareness of oocyte donation observed in Isikoglu *et al.*'s (2006) sample of general populations and Baykal *et al.*'s (2008) infertile populations.

Studies have also found that there appears to be some gender, fertility status and ethnic differences between participants in their attitudes towards oocyte donation. For example, men are more positive and accepting of oocyte donation than women (Lessor *et al.*, 1990; Chliaoutakis, 2002; Isikoglu *et al.*, 2006) and this gender bias may also be attributable to the maintaining of genetic ties between father and child in oocyte donation. Fertility status also appears to have an impact on people's attitudes towards oocyte donation. For example, Bolton *et al.* (1991) and Kazem *et al.* (1995) found infertile populations find oocyte donation more acceptable than fertile participants. In addition, Kazem *et al.* (1995) also noted that support for oocyte donation was greater if the individuals were aware that

their infertility could only be treated with donated gametes. However, Baluch, Fallone, Anderson, Furnham and Aghssa (1994) found the opposite and fertile British and Iranian women were significantly more positive towards oocyte donation than infertile women. Baluch *et al.* recruited their fertile group from a university population (mean age 21) and their results appear to suggest that younger women may have more simplistic attitudes towards oocyte donation than women who are older or infertile (e.g. Kazem *et al.*, 1995).

The research literature has also suggested that there are some ethnic differences in attitudes towards oocyte donation; however the data is complex and contradictory. For example, in a series of focus groups, Culley, Hudson, Johnson, Rapport and Katbamna (2007) found that British South Asians considered oocyte donation to be socially unacceptable and that many felt using donated oocytes should only be considered as a last resort. However, using donated oocytes was still considered to be more acceptable than using donated sperm (this preference has also been observed in White participants too- Kazem *et al.*, 1995 and Kailasam *et al.*, 2001) and this may once again highlight a social-cultural preference in maintaining genetic ties between father and child. Similar findings were echoed in Bharadwaj's (2003) exploration of attitudes towards gamete donation among Indian infertile populations. Chliaoutakis *et al.* (2002) also reported a significant link between religiosity and reluctance to donate among Greek populations. However, Bharadwaj found that attitudes towards oocyte donation were complex and that although infertile participants reported objections towards oocyte donation (mainly on religious grounds); nevertheless they considered it to be acceptable just as long as it was kept in secrecy and silence. Studies from some Islamic countries have also found that men and women share positive attitudes towards oocyte donation (e.g. Isikoglu *et al.*, 2006; Baykal *et al.*, 2008), despite the fact that some Muslims believe third party conception is forbidden by Islamic law (Inhorn, 2006). It is possible that the pursuit of parent/motherhood through any means

available (e.g. donated gametes) overrides any religious or societal objections. For example, Lyall *et al.* (1995) found that the high levels of public support for oocyte donation observed in their study stemmed partly from the fact that oocyte donation allowed women to experience motherhood. Moreover, Baluch *et al.* found no significant differences in attitudes towards oocyte donation between British and Iranian women, irrespective of their fertility status. However, they did find that Iranian women were significantly more likely to believe that God is responsible for infertility. Yet, Khalili *et al.* (2006) did find that Christian Iranians were more supportive of oocyte donation than Muslim Iranians. However 51% of the Christian sample and only 6% of the Muslim sample were males and, as other studies have found, males are more supporting of oocyte donation than females, (e.g. Lessor *et al.*, 1990; Chliaoutakis, 2002; Isikoglu *et al.*, 2006), it is possible that gender may also explain in part some of these observed differences.

Attitudes towards oocyte donation are likely to be affected by knowledge of oocyte donation, fertility status, ethnicity, availability of donation and the maintenance of partial genetic ties. However, although general attitudes towards oocyte donation are positive, studies have found that the majority of women do not report an intention to donate their oocytes (e.g. Kazem *et al.*, 1995; Chliaoutakis, 2002; Chliaoutakis, Koukouli and Papadakaki, 2002; Skoog-Svanberg *et al.*, 2003a,b; Purewal and van den Akker, 2006; Brett *et al.*, 2008). The sections described below will extrapolate some of the reasons why generally women may or may not donate. First, the demographic and psychological profiles of oocyte donors reported in the reviewed studies are described below.

#### **2.4.4 Demographic & Psychological Profile of Oocyte Donors**

Across the studies examined, as expected, donors (irrespective of donor type) are typically aged between 20 to 35 years (the upper age limit for donors is 35 years in most clinics throughout the world). Studies have reported that the majority of patient and non-patient donors are White (Power *et al.*, 1990; Schover *et al.*, 1990, 1991, 1992; Kirkland *et al.*, 1992; Sauer and Paulson, 1992; Greenfeld *et al.*, 1995; Rosenberg and Epstein, 1995; Söderström-Anttila, 1995; Khamisi *et al.*, 1997; Fielding *et al.*, 1998; Kan *et al.*, 1998; Klock *et al.*, 1999; Kalfoglou and Geller, 2000a; Kalfoglou and Gittelsohn, 2000; Patrick, Smith, Meyer and Bashford, 2001; Beatens *et al.*, 2000; Byrd *et al.*, 2002; Klock *et al.*, 2003; Jordan *et al.*, 2004; Winter and Daniluk, 2004; Almeling, 2006; Zweifel, Rathert, Klock, Walaski, Pritts, Olive and Lindheim, 2006; Yee *et al.*, 2007), a finding confirmed in studies of potential donors (Skoog-Svanberg *et al.*, 2003a; Purcwal and van den Akker, 2006; Brett *et al.*, 2008). However, the research syntheses revealed that there are intrinsic differences between the donor groups. For example, studies have reported that known donors are usually married with children (Greenfeld *et al.*, 1995; Khamisi *et al.*, 1997; Beatens *et al.*, 2000; Warren and Blood, 2003; Winter and Daniluk 2004; Yee *et al.*, 2007). However more variation has been observed with volunteer and commercial donors, with only some studies reporting that the majority of commercial and volunteer donors were married with children (Power *et al.*, 1990; Schover *et al.*, 1991; Söderström-Anttila, 1995; Kan *et al.*, 1998; Klock, Braverman and Rausch, 1998), whereas other studies have reported that donors were mostly single and nulliparous (Schover *et al.*, 1990; Rosenberg and Epstein, 1995; Klock *et al.*, 1999; Lindheim, Chase and Sauer, 2001; Patrick *et al.*, 2001; Klock *et al.*, 2003; Jordan *et al.*, 2004). Some of these inconsistencies may be explained by the recruiting clinic's policy on parity. Some clinics only recruit parous women, whereas other clinics have no strict guidelines (e.g. Lessor *et al.*, 1993; Klock *et*

*al.*, 1998) and parous women are more likely to be married than nulliparous. However, one study did make a direct comparison between a small sample of known and commercial donors in a clinic which recruited nulliparous and parous women and found that known donors were significantly older, married and had experienced previous pregnancy compared to commercial donors (Greenfeld *et al.*, 1995). These differences are meaningful and make sense. Recipient couples are more likely to recruit women from their personal network (thus they will probably be in the same age group as the couple) and have the authority to recruit women who may be over the usual age limit (35 years). Whereas, clinics have to abide by the age restriction guidelines set out when recruiting volunteers or commercial donors.

Further, studies on known donors (Beatens *et al.*, 2000; Warren and Blood 2003; Yee *et al.*, 2007) and a study consisting of known and volunteer donors (Byrd *et al.*, 2002) have reported that most donors have completed their families and have no intention to have any more children. Non-patient donors (known, volunteer and commercial) also tended to be educated women, often with university education (Sauer and Paulson, 1992; Greenfeld *et al.*, 1995; Rosenberg and Epstein, 1995; Söderström-Anttila, 1995; Byrd *et al.*, 2002; Klock *et al.*, 2003; Kirkman, 2003; Warren and Blood, 2003; Jordan *et al.*, 2004; Winter and Daniluk, 2004; Almeling, 2006), and there is some evidence to suggest a significant proportion of them work in health care such as nursing and midwifery (Sauer and Paulson, 1992; Söderström-Anttila, 1995; Byrd *et al.*, 2002). Studies on patient donors have reported that as expected, the majority of patient donors were married (Ahuja *et al.*, 1997, 1998; Blyth, 2004) and a large proportion were childless (Ahuja, 1997).

The possible presence of psychopathology of non-patient oocyte donors has been of interest to some researchers and there has been some concern that oocyte donation may

appeal to women who display some psychological dysfunction (Englert, Serena, Philippe, Fabienne, Chantel and Anne, 2004). For example, as can be seen from the table 2.4.1, Schover *et al.* (1990, 1991, 1992) used the Minnesota Multiphasic Inventory (MMPI) and reported a disturbing picture of prospective commercial donors. They found that just over half of their sample reported mild depressive episodes or anxiety symptoms and two women had a major psychiatric disorder. However, other studies have reported contradictory reports, for example, Bartlett (1991), Greenfeld *et al.* (1995) and Klock *et al.* (2003) evaluated the psychological profile of commercial and known donors and Lessor, Cervantes, O'Connor, Balmaceda and Asch (1993) and Klock *et al.* (1999) evaluated prospective commercial donors and they found no significant psychopathology and scores on psychological measures such as the MMPI were within normal ranges. However, Lessor (1993) and Klock *et al.* (1999) reported that prospective commercial donors often demonstrate non-traditional sex role beliefs and behaviours and are socially outgoing and gregarious. It is important to note however that all these studies have been conducted in the US, where the American Society for Reproductive Medicine (ASRM, 2004) have set guidelines on the psychological assessment of oocyte donors and women who demonstrate psychological risk should not normally be considered as candidates. So, although prospective donors might demonstrate some psychopathology, as was found in Schover *et al.*'s (1990, 1991, 1992) studies, accepted donors reported in the research literature generally do (*should*) not (c.g. Bartlett, 1991; Greenfeld *et al.*, 1995; Klock *et al.*, 2003). Further, as most of these studies have been conducted in the US, little is known about the psychological profile of donors across the world and of volunteer and patient donors, because as can be seen from table 2.4.1, the American research literature on oocyte donation has mainly reported commercial and occasionally known donors.



There are only a limited number of studies that have done any psychological comparison with oocyte donors and control groups of 'normal' women. Bartlett (1991) compared known donors and their recipient couples to a comparison sample of infertile women on demographic and psychological function (as measured by the Hopkins Symptom Checklist-90) and no significant differences were reported and all groups scored within normal ranges. The lack of significant differences and scores within normal ranges is to be expected with known donors because they are recruited by couples who are often friends and family members and couples are unlikely to recruit women who display any visible signs of psychopathology. It is important therefore to establish the psychological profile of women who voluntarily donate their oocytes without a personal request or prompt and in essence recruit themselves. Some studies have done this. Greenfeld, Mazure, Olive and Keefe (1995) compared known donors to commercial donors and found no group differences and no significant psychological dysfunction or family history of psychiatric illness. Whereas, Schover *et al.* (1990) compared prospective commercial donors to healthy controls on a multiple choice questionnaire on reproductive traumas and family turmoil. They found prospective donors were significantly more likely than controls to have experienced reproductive or emotional traumas. Schover *et al.* did not compare the two groups on psychological assessments (MMPI), that is likely because the MMPI has been standardized using general populations in the US which acts as the comparison group. So far there has been no psychological assessment of volunteer donors and they are arguably the most interesting group of oocyte donors. Unlike other donor groups, volunteer donors undergo a relatively risky medical procedure for no apparent incentive.

However, studies on the psychological profile of oocyte donors must be interpreted with some caution. As mentioned in section 2.4.2.2, a problem with these clinical studies are that they report psychological interviews and assessments as part of the oocyte donation

eligibility process, and it is possible that women may be 'impression managing'. To some extent, these fears have been realised in the data. For example, Schover *et al.* (1990), Lessor *et al.* (1993), Klock *et al.* (1999) reported elevated K scores on the MMPI (version 1 and 2), which represented an attempt to minimise anxiety and present themselves favourably. Further, Kalfoglou and Geller (2000b) in an in-depth interview study noted that commercial donors concealed certain information from the mental health practitioner conducting the psychological interviews because they understood they could be excluded from the donation procedure with their personal details. Thus, clinical studies may not be presenting a 'true' profile of donors.

To sum, studies have found there are some differences between the demographic profiles of different types of oocyte donors, however studies on the psychological profile of donors appear to suggest that most oocyte donors are free from any significant psychopathology. Studies have also examined donors' attitudes towards various aspects relating to oocyte donation, such as donors' perceptions of oocytes and the importance of a genetic link and this will be discussed in the next section.

#### ***2.4.5 Perceptions of Oocytes and the Perceived Importance of Genetic Ties***

Qualitative (Weil *et al.*, 1994; Snowdon, 1994; Beatens *et al.*, 2000; Kirkman, 2003; Rapport, 2003; Winter and Daniluk, 2004) and two quantitative investigations (Ahuja *et al.*, 1998; Byrd *et al.*, 2002) have found that the perceived unimportance of genetic ties between parents and children is an important determinant of oocyte donation. Patient and non-patient donors are reported to perceive oocytes as a collection of cells rather than a potential life form, and do not devote maternal attachment to oocytes or the resultant child and genetic connections are always undermined (Weil *et al.*, 1994; Snowdon, 1994; Ahuja

*et al.*, 1998; Beatens *et al.*, 2000; Byrd *et al.*, 2002; Kirkman, 2003; Winter and Daniluk, 2004). These findings have also been confirmed in potential oocyte donors (Skoog-Svanberg *et al.*, 2003; Purewal and van den Akker, 2006). A few studies with non-patient donors have also found that some donors perceived oocyte donation as an opportunity to avoid wasting healthy oocytes (Beatens *et al.*, 2000; Byrd *et al.*, 2002; Kirkman, 2003). Kirkman (2003) in a detailed interview study of 16 known and volunteer donors found that donors do not usually consider the donor offspring as their child, believing instead that a gestational bond is necessary for a child to become 'your child' and these findings have been echoed in smaller samples of oocyte donors (Snowdon, 1994; Winter and Daniluk, 2004). Ahuja *et al.* (1998) in a quantitative investigation also found that their sample of 114 patient donors did not perceive the oocytes they donated as 'their child' and they distanced themselves from the oocytes and downplayed the importance of a genetic link with any potential donor offspring. However, Rapport (2003) interviewed 11 potential patient donors and found that patient donors often downplayed the importance of a genetic tie as a mechanism to cope with the oocyte donation process and their doubts about oocyte sharing.

Qualitative studies have been key in understanding the subtle complexities in oocyte donor's perceptions of oocytes and genetic ties, which quantitative investigations have failed to capture. Studies have found that non-patient and potential oocyte donors are predisposed to, and patient donors become inclined, to think of their oocytes as biological matter and minimise the importance of genetic ties between parent and child. These perceptions may be important factors setting the foundation for the motivation for oocyte donation. A number of studies have assessed women's motivation for oocyte donation and they are reviewed in the section below.

#### 2.4.6 Motivation

One of the reasons why oocyte donors are screened for psychological dysfunction is because there are some concerns over the motivation of women, particularly non-patient donors who donate their genetic material through a potentially risky procedure. Motivation for oocyte donation is complex and intriguing and the research literature appears to suggest that donor's motives differ depending on their donation 'type'. For example, studies with known donors have usually reported that the majority of known donors are motivated by their personal relationship with the recipients (Greenfeld *et al.*, 1995; Khamisi *et al.*, 1997; Beatens *et al.*, 2000; Warren and Blood, 2003; Winter and Daniluk, 2004; Yee *et al.*, 2007). Whereas studies on volunteer donors have found that they often report general altruistic motives for donating (Power *et al.*, 1990; Söderström-Anttila, 1995; Byrd *et al.*, 2002). The motives of commercial donors appear to be more mixed because, although many commercial donors have reported altruistic motives behind their donation (Schover *et al.*, 1990, 1991; Raoul-Duval *et al.*, 1992; Klock *et al.*, 1998, 2003; Almeling, 2006), financial gain has also been noted (Sauer and Paulson, 1992; Greenfeld *et al.*, 1995; Kalfoglou and Gittelsohn, 2000; Patrick *et al.*, 2001). These inconsistencies in studies could be explained by the fact that some of the data are from prospective psychological assessment of donors (Schover *et al.*, 1990, 1991; Raoul-Duval *et al.*, 1992; Sauer and Paulson, 1992; Greenfeld *et al.*, 1995) and may not be reliable sources of motivation indicators: donors are arguably more likely in assessment circumstances to report altruistic motives than financial ones. For example, the link between financial motives and oocyte donation was eloquently described by Lindheim *et al.* (2001). Lindheim *et al.* found there was an association with greater financial gain and increased financial motive. They found that financial motivation was greater for prospective commercial donors receiving \$5000 dollars compared to donors receiving \$2500. Although, some form of altruism was

expressed in both groups, altruism as the sole motivator occurred more in the \$2500 group than the \$5000 group. Moreover, Patrick *et al.* (2001) found that the majority of commercial donors believed financial compensation was necessary to compensate for the hardship they endured and most would not donate if payment was not provided. However in countries where payment is not permitted, most donors were against payment for oocyte donors (Power *et al.*, 1990; Kirkland *et al.*, 1992; Kazem *et al.*, 1995; Ahuja *et al.*, 1998; Fielding *et al.*, 1998) and Shaw (2007) found some of her oocyte donors she interviewed believed any financial compensation would cheapen their 'gift' to other women. However, Byrd *et al.* (2002) in a UK and Westlander *et al.* (1998) in a Swedish investigation found some donors considered payment to be acceptable to cover expenses but not for financial gain.

Oocyte donation for patient donors through oocyte sharing agreements has been controversial and it has been criticised for commercialising oocyte donation in countries such as UK, where commercial donation is illegal (e.g. Hands Off Our Ovaries campaign, HOOO, 2006). However, Ahuja *et al.*, (1997, 1998) (who pioneered the first oocyte sharing scheme in the UK) surveyed patient donors and reported that donors felt helping another childless couple was just as important as helping themselves through the oocyte sharing model. Further, Blyth (2004) interviewed patient donors on their motivation for donating and found that altruism and self interest were the primary reasons for donation and the majority of patient donors believed oocyte sharing is a 'win win' situation for all parties involved. However, Rapport (2003) was critical of research that has suggested women are motivated by altruism (e.g. Ahuja *et al.*, 1997, 1998) and argued that equating oocyte sharing with altruism was ill advised and if the NHS funding for fertility treatment was not rationed, she was doubtful whether women would participate in oocyte donation. Rapport argued that it was women in the pursuit of 'motherhood' which motivated them to

donate proportions of their oocytes and not altruism. The link between motherhood and oocyte donation (irrespective of donor type) has been observed by other researchers too. For example, Raoul-Duval *et al.*, (1992) argued volunteer oocyte donors received maternal gratification for donating their oocytes and Weil *et al.* (1994) suggested oocyte donation allowed some volunteer donors the opportunity to create an imaginary filial tree on which they can project their own idealised parental images. Other researchers have noted that important factors underpinning non-patient donors reasons for donation was their appreciation of the desire for motherhood (Kalfoglou and Gittelsohn, 2000; Byrd *et al.*, 2002; Kirkman, 2003; Winter and Daniluk, 2004; Yee *et al.*, 2007) and this has also been found in potential donors (Purewal and van den Akker, 2006). However, at present there is no known investigation with actual oocyte donors that has empirically linked oocyte donation to some form of motherhood motivation or fulfilment.

Some unusual and self gratifying reasons for donating oocytes among commercial, volunteer and potential donors have also been reported, such as the confirmation of their fertility (Jordan *et al.*, 2004) and to pass on their genes (Kalfoglou and Gittelsohn, 2000; Skoog-Svanberg *et al.*, 2003a). Researchers have noted some known and commercial donors are motivated to make up for a loss, such as a past abortion or rape (Klock *et al.*, 1999, 1998; Kalfoglou and Gittelsohn, 2000; Jordan *et al.*, 2004) and Klock *et al.* (1999) reported that clinically, many women who had a previous abortion reported the oocyte donation helped them compensate for the loss of a pregnancy through abortion with the creation of a pregnancy through oocyte donation. Schover *et al.*, (1990, 1991, 1992) also reported high levels of family turmoil and reproductive traumas among prospective commercial oocyte donors, however it is important to note that Schover *et al.* was reporting an association between reproductive traumas and oocyte donation and not cause and effect.

On the whole, the research literature has demonstrated that motives for oocyte donation are at times dependent on the specific type of donation and there appears to be a variety of reasons underpinning the motivation for oocyte donation. However, the reporting of psychological interviews and assessments in oocyte donation motives is problematic and raises serious concerns on the validity of reported motivations of oocyte donors. The next three sections will focus on factors relevant for policy and health care service. First, studies which have addressed issues relating to disclosure & anonymity are reviewed.

#### ***2.4.7 Attitudes towards Disclosure & Anonymity***

Studies have found that some patient and non-patient donors (volunteer and commercial) believed that the donor offspring has a right to know their genetic origin (Söderström-Anttila, 1995; Ahuja *et al.*, 1997; Fielding *et al.*, 1998; Patrick *et al.*, 2001; Urdapilleta *et al.*, 2001; Blyth, 2004), whereas, Klock *et al.* (1998) found that the majority of their commercial donors did not support disclosure. However, known donor's attitudes towards disclosure appear to be more complicated because they are known to the recipient family and may have regular contact with the donor offspring. For example, Greenfield *et al.* (1995) found differences between known and commercial donors regarding disclosure; known donors were less likely to believe the child should be informed of their genetic origins compared to commercial donors. Indeed, Khamsi *et al.* (1997) found 80% of recipients and donors in known donation would not disclose information to the child and Yee *et al.* (2007) and Weil *et al.* (1994) found known donors were respectful of the recipient parent's disclosure decision, regardless of personal preference (Yee *et al.*, 2007).

The issue of donor anonymity is closely related to disclosure. Recently, many European countries such as Sweden, the Netherlands and the UK have abolished donor anonymity and donors are required to provide identifying information. Consequently, there has been a great deal of research done to examine donor's attitudes towards anonymity, particularly to learn how the current legislation might affect their donation behaviour. Some studies have found that the majority of commercial donors (Klock *et al.*, 2003), volunteer donors (Kirkland *et al.*, 1992) and patient donors (Blyth, 2004) would still continue to donate as identifiable donors. Whereas, Power *et al.* (1990) reported 87% of volunteer donors would donate as identifiable donors but only 40% of patient donors would still consider donating. Craft *et al.* (2005) surveyed former volunteer donors in the UK about the current change in UK legislation and found that 69% of their sample of volunteer donors said they would donate again even after the removal of anonymity, however 36.4% would not and Craft *et al.* suggested this drop would have a significant impact on the current shortage of oocyte supply. Frith *et al.* (2007) questioned former UK donors on their concerns regarding the removal of anonymity and 32% of the issues raised concerned consequences of a donor offspring making contact after 18 years. Included in these concerns were issues relating to emotional liability; personal security; impact on family members (particularly spouse); and psychological effects on both donor and child. Unfortunately, Frith *et al.* (2007) did not distinguish between patient, volunteer and known donors in their data analyses, so there is no information on between-group differences.

There has also been some work done with general and infertile populations and their willingness to become identifiable donors. Studies that have measured women's intention to potentially donate have reported that a significant minority are prepared to donate as identifiable donors and the figures have ranged from 17% (Skoog-Svanberg *et al.*, 2003a; Brett *et al.*, 2008) to 30% (Purewal and van den Akker, 2008). Westlander *et al.* (1998)



also found 40% of infertile and fertile people donate as identifiable donors and Oskarsson *et al.* (1991) also reported similar findings with their sample of infertile patients. However, these data must not be taken at face value because these studies have all reported intentions and not actual behaviour. Intentions reported by participants under research conditions may not necessarily translate into actual behaviour and as there is a chronic shortage of oocyte donors across the world, we know that most women do not donate their oocytes as identifiable or non-identifiable donors.

Studies have found that some patient and non-patient donors (volunteer and commercial) welcome legislations that give donor children the right to know their genetic origin. However, known donor's attitudes towards disclosure and children's right to know their genetic origin is more complicated and they are subsequently less positive towards disclosure issues. Further, studies also appear to suggest that a significant proportion of donors are willing to donate as identifiable donors. The next section will present studies on oocyte donor's attitudes and relationships with the donor offspring and recipient couples.

#### ***2.4.8 Relationship with Donor Offspring and Recipients***

Although the research literature on oocyte donor's attitudes towards the donor offspring is mixed, there is strong evidence that indicates most donors (patient, commercial and volunteer) would want information on the outcome of the pregnancy (Power *et al.* 1990; Söderström-Anttila, 1995; Ahuja *et al.* 1997; Fielding *et al.*, 1998; Klock *et al.*, 1998; Kalfoglou and Gittelsohn, 2000; Kalfoglou and Geller, 2000a; Patrick *et al.* 2001; Klock *et al.* 2003; Blyth, 2004; Jordan *et al.* 2004). Studies with known (Winter and Daniluk, 2004; Yec *et al.*, 2007) and commercial donors (Kalfoglou and Gittelsohn, 2000) have found that when there had been a pregnancy, donors felt good, but where it did not result in

pregnancy, they felt profoundly disappointed. Kalfoglou and Geller (2000a) found that commercial donors reported the most common reason for wanting to know the pregnancy outcome is to feel good about donation, and to be in a position to protect children from having sexual relationships with half-siblings. Studies have also reported that non-patient donors do not report having obsessive or protruding thoughts about the donor child (Söderström-Anttila, 1995; Fielding *et al.*, 1998; Kalfoglou and Gittelsohn, 2000; Yee *et al.* 2007), although this may be because this question is not often asked.

Reports on the number of commercial and volunteer donors amenable to contact with the donor offspring are contradictory. Power *et al.* (1990), Kirkland *et al.* (1992), Kalfoglou and Geller (2000a), Patrick *et al.* (2001), Braverman and Corson (2002) and Klock *et al.* (2003) all reported a significant proportion of donors would not object to contact with the donor offspring once they are of age and Söderström-Anttila (1995) found that 48% of volunteer donors would be willing to take care of the donor child if both parents died. Skoog-Svanberg *et al.* (2003) also found that many potential donors were amendable to future contact with the donor child. Whereas, Fielding *et al.* (1998) and Jordan *et al.* (2004) found most donors would prefer not to have contact with the donor offspring. Studies on known donors are inherently more interesting because these donors may have regular contact with the donor offspring. However, most known donors questioned have reported they prefer minimal or no contact with the donor offspring (Weil *et al.*, 1994; Khamisi, *et al.*, 1997; Beatens *et al.*, 2000; Kirkman, 2003; Yee *et al.*, 2007). Yee *et al.* (2007) found many of their known donors reported they would treat the donor child as any other child of their friends or family and Khamisi *et al.* (1997) explored contact with offspring in a qualitative study and found no known donor reported anticipating an urge to raise the donor child themselves. However, the way the question is asked in research may account for some of the differences and contradictions as Beatens *et al.* (2000) found a

significant minority of known donors had ambivalent feelings towards the child and wished to be sure that the child would be well taken care off by the recipient parents. Further, as can be seen from table 2.4.1, follow-up studies with oocyte donors tend to be recruited within weeks (e.g. Kloek *et al.*, 1998), months (e.g. Söderström-Anttila, 1995; Braverman and Corson, 2002; Klock *et al.*, 2003) or just a few years after donation (e.g. Fielding *et al.*, 1998; Kalfoglou and Gittelsohn, 2000; Yee *et al.* 2007). Thus, there has not been a long enough period to accurately assess how the donors would feel about the donor child in the long-term. Further, it is important to note that some recipients are against known donors keeping in contact with the donor child (Bolton *et al.*, 1991; Place, Larnelle, Demeestere, Englert and Delbaere, 2008).

Studies have found that most patient, volunteer and commercial donors do not report any desire to meet the recipient couple (Power *et al.*, 1990; Fielding *et al.*, 1998; Kalfoglou and Geller, 2000a; Blyth, 2004). Kalfoglou and Geller (2000a) conducted in-depth interviews with donors (the majority were commercial donors) and found that most donors were given little or no information about the recipients. Some donors reported that additional information might make donation more complicated and felt characteristics such as age, race or religion of the recipient couple were not important to them. But some donors were concerned about other characteristic of donors, and they would not want to donate to recipients with a history of violence or domestic abuse, unstable marriage, criminal background, substance abuse or homosexuals. Most participants were reassured knowing that the couple desperately wanted to have a child. However, Jordan *et al.* (2004) did find that a significant minority (37.5%) of commercial donors were concerned about the parenting style of recipients.

To sum, the research evidence appears to suggest that a large proportion of donors studied want to know whether there has been a successful pregnancy or not. However, there are some donors who would not object to having contact with the donor offspring, whereas, other donors prefer no contact. Many of the donors asked also do not report any desire to meet the recipient couples or know additional information about them. Now, the final segment of the results section will consider studies that have assessed oocyte donor's experiences of the oocyte donation procedure.

#### **2.4.9 Oocyte Donation Procedure**

On the whole, there is consistent evidence demonstrating that the oocyte donation procedure is well tolerated and most donors of all donation types report high levels of satisfaction with the quality of medical care (Power *et al.*, 1990; Schover *et al.*, 1991; Kirkland *et al.*, 1992; Rosenberg and Epstein, 1995; Söderström-Anttila, 1995; Ahuja *et al.*, 1998; Klock *et al.*, 1998; Kalfoglou and Gittelsohn, 2000; Braverman and Corson, 2002; Klock *et al.*, 2003; Jordan *et al.*, 2004; Yee *et al.*, 2007). Although, 43% of known and volunteer donors in Byrd *et al.*'s (2002) study found the process painful, stressful or both, most donors concluded that the problem had been manageable and oocyte donation was worthwhile. However, complaints and disappointments have also been noted. For example, oocyte retrieval was found to be physically and emotionally draining (Raoul-Duval *et al.*, 1992) and some commercial donors have reported medical staff were perceived to be cold and impersonal and they were made to feel like a commodity (Kalfoglou and Gittelsohn, 2000). However, the most notable complaint was more practical and relating to the geographical distance that donors (known, commercial and volunteer) had to travel and to time inconvenience (Sauer and Paulson, 1992; Patrick *et al.*, 2001; Byrd *et al.*, 2002; Yee *et al.*, 2007) but not the medical or physical aspects of

donation (e.g. hormonal injections, retrieval, side effects). Indeed, according to Kan *et al.* (1998) distance involved and time commitments were the main reasons why some women did not go ahead with voluntarily donation.

However, Zweifel *et al.* (2006) found that donor's attitudes towards various donation scenarios (e.g. willingness to donate to women of advanced age or lesbian couples) changed from pre-donation to post-donation and reflected a greater reservation towards the scenarios. The authors suggested that these differences in attitudes may stem from donors feeling more empowered to express their opinions. Donor's feelings of empowerment possibly stem from the fact they no longer need to censure their responses during the post-donation interviews because they have already been accepted as donor.

Another important feature in patient and non-patient donor's experiences of donation was meetings with mental health practitioners (counsellors, psychologists and psychiatrists). Studies have found that the majority of donors questioned found counselling invaluable (Schover *et al.*, 1991; Ahuja *et al.*, 1997; Ahuja *et al.*, 1998; Patrick *et al.*, 2001; Jordan *et al.*, 2004) and helpful in making disclosure decisions in known donation (Winter and Daniluk, 2004; Yee *et al.*, 2007). However, Kalfoglou and Geller (2000b) noted that commercial donors perceived there was a 'strangeness' in their relationship with the mental health practitioner because they believed they could be excluded from the donation programme with the information they provided to them, so many of them concealed certain personal details. Further, anecdotal accounts from clinics indicate that many oocyte donors do not actually take-up counselling which is offered. It is possible therefore there is a sample bias because the 'type' of donor who participates in research, may be the 'type' of donor who would find the counselling experience useful, and they may not represent the oocyte donor population.

In spite of this, most donors from all donor groups reported they would donate again (Power *et al.*, 1990; Schover *et al.*, 1991; Ahuja *et al.*, 1997; Fielding *et al.*, 1998; Klock *et al.*, 1998; Byrd *et al.*, 2002), and Söderström-Anttila (1995) surveyed 27 volunteer donors and none of them regretted donating their oocytes. Rosenberg and Epstein (1995) found that 90% of their sample of 32 commercial donors claimed that donation changed their life in a positive way, suggesting the psychological benefits outweigh the physical costs of the oocyte donation process. Nevertheless, the apparent discomfort with mental health practitioner contact remains a significant concern.

## **2.5 Discussion**

### ***2.5.1 Summary of research synthesis***

The aims of this systematic review were to integrate the findings regarding the psychological determinants of oocyte donation and to explore women's experiences of donation. The research syntheses revealed that general attitudes towards oocyte donation are positive. There were distinct differences between patient and non-patient (known, commercial, volunteer and potential) donors on various issues relating to oocyte donation. Studies have found that the majority of donors were aged between 20 to 35 years, White and educated. However, known donors were more likely to be married and parous compared to commercial and anonymous donors whilst, patient donors were more likely to be married but nulliparous. Studies that have examined motivational determinants of oocyte donation have reported that known donors were motivated by their personal relationship with the recipient couple; volunteer donors reported they were motivated by general altruistic motives; and commercial donors have reported altruistic and financial motives for donation. However, the research literature indicated there might be ambiguity

relating to patient donors motives for donating oocytes. Further the literature has suggested that although the majority of patient, commercial, volunteer and potential donors believed the donor offspring have a right to know their genetic heritage, known donors were more likely to differ from the other donor groups on their attitudes towards disclosure and feelings towards the resultant offspring. A significant proportion of patient donors, non-patient donors and women from the general population were found to be willing to donate their oocytes as identifiable donors, although most attach little importance to a genetic link. Perceptions of the importance of motherhood appeared to be important factors underpinning women's decision to donate. Consistently and reassuringly, the research findings have shown that the oocyte donation procedure is well tolerated and most donors of all donor type report high levels of satisfaction with the quality of medical care but ambivalence and concerns about psychological care.

#### ***2.5.2 Determinants of oocyte donation and women's experiences of the donation process***

The research synthesis has identified a number of factors that have significance for screening and service and provide insight into the determinants of oocyte donation and women's experiences of donation process. For example, perceptions of the [un]importance of genetic ties could be an important differentiator between women who are willing to donate their oocytes to those women who are unwilling. Studies have found that women who donate or are potentially willing to donate minimise the importance of genetic ties. It is probable that only women who do not attach symbolic significance to their oocytes would be able to donate or alternatively, justify their actions by underplaying the importance of a genetic link, because it is easier to relinquish something which matters little. Although this explanation might apply to non-patient donor groups, it is unclear whether patient donors hold these pre-existing attitudes (which makes them more willing

to enter in an oocyte sharing contract) or whether the oocyte sharing changes their attitudes through cognitive re-construction. Thus, it is possible that patient donors may need targeted counselling to address the implications of donating their genetic material and to aid in the cognitive re-construction of some lifelong attitudes towards oocytes and importance of genetic ties between parent and child.

There still remains some uncertainty towards volunteer and commercial donor's motivation for oocyte donation. Reports have been mixed, and a variety of motivations have been cited (e.g. altruism, financial gain, making up for a loss and confirming fertility). It is likely however that financial motivation stems from the availability of financial gain and is not necessarily an impetus to donate, since it never features in research studies of countries where no financial gain is possible. Another factor identified from the research literature is the importance of motherhood in relation to oocyte donation and some studies have suggested it is a significant factor underpinning women's reason for donation. It may be for this reason why existing recruitment appeals for oocytes donors "adorn their advertisements with images of plump babies" (Almeling, 2007: pp. 326).

The pooled evidence suggests that most donors have reported positive experiences of oocyte donation. However, there were a few key issues raised. For example, most donors want to learn about the outcome of their donation and this is very important to them. Also, practicality issues (such as long distance travel and time inconvenience) related to oocyte donation could potentially determine whether women enjoyed the donation procedure or not and medical or psychological consequences were not reported to be as important or deterrence. Further, the literature also suggests that a significant proportion of donors and potential donors studied were not negative towards legislations in the UK and other European countries which have removed donor anonymity and allowed donor offspring



access to donor's identity. Although reassuring, there still remains a large minority of donors who will not donate as a consequence of these legislations, and because of the shortage of oocyte donors across Europe and the UK, this will undoubtedly cause concerns for recruiting clinics.

### ***2.5.3 Similarities between oocyte donors and surrogate mothers***

The research findings also suggested there were some notable similarities between non-patient oocyte donors and surrogate mothers. For example, Ragone (1994), Blyth (1994) and van den Akker (2003) found most surrogate mothers enjoyed pregnancy and reported altruistic reasons for becoming a surrogate. Like oocyte donors, they too report positive and self-enhancing experiences as a consequence of becoming a surrogate mother. In addition, surrogate mothers have also been found to underplay the importance of a genetic link between parent and child to justify their decision to become a surrogate (van den Akker, 2000) and these findings have been mirrored in this review. Schover *et al.* (1990) also noted the similarities between their sample of prospective commercial oocyte donors to women who wish to become surrogate mothers, particularly regarding their demographic profiles and motivations. It is possible that some of these commonalities may stem from socially desirable responding. For example, surrogate mothers are coached from the start to dissociate emotionally from the foetus and child. If this deliberate cognitive restructuring is successful, the relinquishing process appears to be easier (van den Akker, 2003, 2007) and it is possible the same could be happening with oocyte donors.

#### **2.5.4 Current State of Research and Future Direction**

There were a number of methodological limitations identified in this systematic review relating to the research literature as a whole. Specifically, many studies have reported small numbers, even in quantitative studies. Further, oocyte donors are rarely compared to any appropriate control groups. A number of studies have reported data from psychological interviews and assessments, and as shown in the review, this can be problematic. There is also no longitudinal work with oocyte donors that has assessed the long-term consequences of donation. This is of particular importance in certain countries (e.g. the UK, Sweden, the Netherlands, Austria, Switzerland, and Norway) because of the possibility of donor offspring seeking contact with donors after 18 years. In addition, there is a lack of intervention work or application of theory in oocyte donation research (Fielding *et al.*, 1998; Applegarth and Kingberg, 1999; van den Akker, 2006).

In addition, it is possible there is a certain degree of 'sampling bias' within the oocyte donation literature. For example, many studies have found that donors find counselling helpful (e.g. Schover *et al.*, 1991; Ahuja *et al.*, 1997, 1998; Patrick *et al.*, 2001; Jordan *et al.*, 2004). However, anecdotal accounts from clinics indicate that many oocyte donors do not actually take-up counselling which is offered. It is possible therefore that the 'type' of donor who participates in research, may be the 'type' of donor who would find the counselling experience useful, and they may not be representative of the oocyte donor population. In addition, the high response rate in some studies with actual donors may also be reflective of a donor group which is highly motivated to take part in research, and this may paradoxically reduce the generalisability of the findings from those studies (e.g. Power *et al.*, 1990; Kirkland *et al.*, 1992).

Some of these limitations may have been responsible for some of the inconsistencies reported in the systematic review. However, a wealth of information has been generated which is useful for researchers, clinicians and policy makers and has implications for clinical and research practice.

## ***2.6 Conclusion***

The aims of this systematic review were to review the research evidence on the psychosocial determinants of oocyte donation and to explore oocyte donor's experiences of donation. A number of key issues emerged from the research syntheses including a number of distinct differences between patient and non-patient donors on various factors relating to oocyte donation. Research evidence suggest there is still no clear understanding of women's motivations of oocyte donation; however the methodological limitations of the studies may have contributed to the inconsistencies found in the literature. Perceptions of the importance of motherhood and unimportance of genetic ties appeared to be important factors underpinning women's decision to donate and relevant to most donor groups. Despite the hazards and discomfort of the oocyte donation procedure, the majority of donors have reported positive experiences of oocyte donation. Chapter 3 describes the research methodologies adopted for the studies in this thesis and addresses some of the limitations identified in the previous literature in this systematic review and the introduction in chapter 1.

### **3. Research Methodology**

#### **3.1 Overview of research methodology employed in this thesis**

The programme of studies in this thesis set out to improve the methodological strength and depth of previous research by utilising a triangulated approach to address the specific research problems. The methodologies chosen reflect a creative approach to delineating the complexities and limitations identified in the systematic review (chapter 2) and the literature review (chapter 1). Described below are the details of the research designs, outcome measurements, data collection methods and data analysis techniques used throughout this thesis. The section will be presented in four-fold. First, justification for using a triangulation approach (3.1.1) and brief summaries of individual studies, which highlight the interrelationship between studies and how each study relates to the thesis research aims and objectives (3.1.2) will be discussed. Second, the research methodology of studies 1 and 4, which have used the same qualitative research design will be described (3.2). Third, the research methodology of studies 2 and 3, which have also used the same quantitative research design will be presented (3.3). This will be followed by the final segment which describes the research methodology of study 5 (3.4), which employed experimental research techniques. Individual studies that are presented in the subsequent chapters are written as complete studies, including their own method sections. So, to avoid repetition of information, participant characteristics will not be described in this chapter. The purpose of this chapter is to highlight the interrelationship between each study and the contribution of individual studies to the research problems; justify using the selected research designs; and describe the procedures, outcome measurements and data analyses of individual studies in greater detail.

### ***3.1.1 Triangulation Approach***

This thesis employed triangulation methodology through a qualitative, quantitative and experimental assessment of attitudes towards oocyte donation for treatment and research and reasons for parenthood. The benefits of using a multi-method approach is that it can provide new insights and enrich explanations of a research issue (Oppermann, 2000). Discussing parenthood research, Reece and Harkless (1996) argued that quantitative research has contributed important knowledge to this area however, for quantitative instruments to best contribute, their examination, refinement and extension must be on-going. Reece and Harkless suggested one way to accomplish this is to re-examine the concept being studied [in this case attitudes towards oocyte donation for treatment and research and reasons for parenthood] by gathering qualitative data. It has been argued that different data sources (e.g. qualitative, quantitative and experimental) permit the understanding of the whole situation as opposed to the understanding of its parts (Myers and Haase, 1989). Further, through triangulation, deficiencies associated with one method can be overcome by combining methods and capitalising on their strengths (Blaikie, 1991). Using qualitative data in conjunction with quantitative data could also be used to validate the quantitative instrument. Bearing this in mind, the five studies were designed and will be described in the section below.

### ***3.1.2 Summaries of individual studies***

This thesis used a questionnaire and experimental design to quantitatively measure attitudes towards oocyte donation [for treatment and research] and reasons for parenthood

and used an interview design to qualitatively assess the same research issues in greater depth. Specifically:

- ❖ **Study 1** (chapter 4) assessed differences in the interpretations and experiences of parenthood using the Reason for Parenthood scale (Langdrige *et al.*, 2005) as a topic guide to the interview. This study qualitatively validated the Reasons for Parenthood scale using IPA and also addressed the aims of this thesis (pp 52). Specifically, this study evaluated the psychological determinants of intentions to donate gametes (aim 1); explored the influence of socio-demographic characteristics and subjective experiences in determining the importance of a genetic link in families created through third party involvement (aim 3); and contributed in attempts to use a diversity of methodological traditions to maximise the research problems (aim 6).
- ❖ The Reasons for Parenthood scale was also used in **study 2** in a questionnaire format to examine the link between oocyte donation and parenthood. The Attitudes towards oocyte donation scale (Skoog-Svanberg *et al.*, 2003a, 2003b) (components of the Theory of Planned Behaviour (TPB) were incorporated in the questionnaire) was used to measure attitudes towards oocyte donation for treatment. This study addressed a number of research aims. Study 2 assessed the psychological determinants of intentions to donate genetic materials (aim 1); investigated the link between intentions to donate genetic materials and attitudes towards parenthood (aim 2); assessed the utility of components of the TPB to examine differential attitudes and beliefs in women's potential oocyte donation for treatment (aim 4); and also addressed aim 6 to employ a diversity of research methods.
- ❖ **Study 3** used a modified version of the Attitudes towards oocyte donation scale to measure attitudes towards oocyte donation for research. Further, the Reasons for

Parenthood scale was also used to examine the link between oocyte donation intention for research and parenthood. This study assessed the psychological determinants of intentions to donate genetic materials to research (aim 1); investigated the link between oocyte donation intentions for research and attitudes towards parenthood (aim 2); evaluated the application of components of the TPB to oocyte donation intentions for research (aim 4); and contributed to aim 6 in attempts to apply a range of research methodologies in the thesis.

- ❖ Key issues that emerged in studies 2 and 3 were then used to inform the topic guide in **study 4** that assessed women's interpretations of oocytes and oocyte donation for treatment and research using IPA. Further, TPB components were incorporated in the topic guide to re-examine the underlying beliefs, as identified by the TPB (*attitudes, subjective norms and perceived behavioural control*), in relation to oocyte donation using qualitative methods in a further attempt to obtain an enriched understanding of oocyte donation and the TPB. Thus this study measured the psychological determinants of donation intentions and [genetic] parenthood (aim 1); assessed the association between oocyte donation for treatment and research intentions and attitudes towards parenthood (aim 2); assessed the influence of socio-demographic characteristics and subjective experiences in determining the importance of a genetic link in families created through third party conception (aim 3); qualitatively examined the components of the TPB in relation to oocyte donation (aim 4); and once again contributed to the use of different research designs and approaches (aim 6).
- ❖ **Study 5** integrated some of the key findings obtained from studies 1, 2, and 3 to develop the messages that were used to examine the effect of gain and loss frames on intentions towards oocyte donation for treatment. This final study evaluated the

utility of framing messages in women’s willingness to donate oocytes for treatment (aim 5) and used a diversity of methodological traditions to address the research problems (aim 6).

Figure 3.1.1 shows a graphical display that illustrates how each study is connected to each other and how data obtained from studies informed the development and interpretation of other studies in this thesis. Data gathered from all these studies were used to enhance the existing understanding of oocytes, oocyte donation and parenthood.

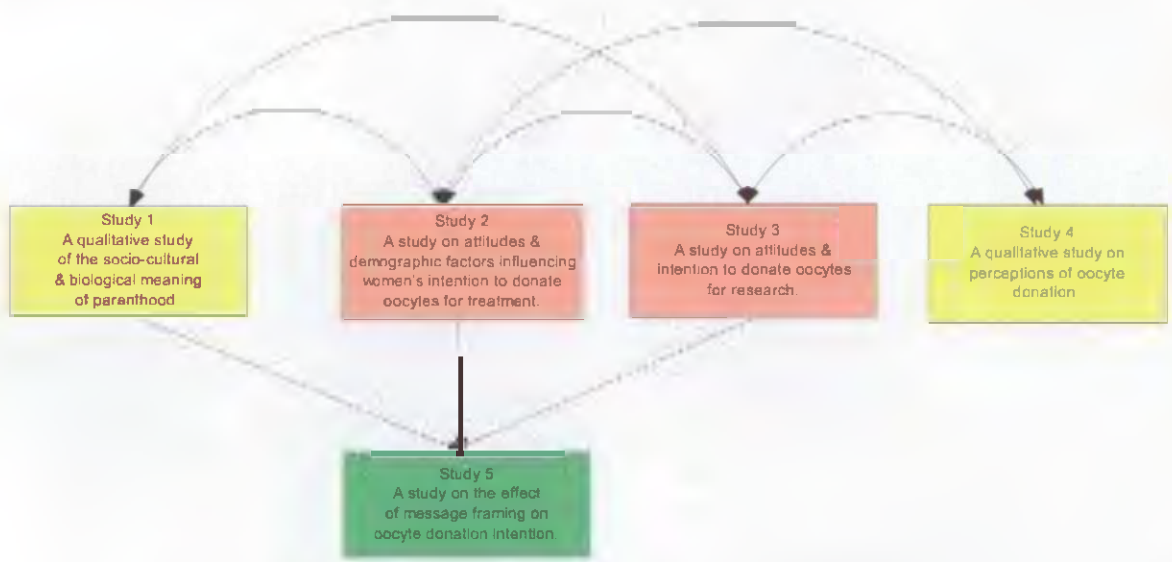


Figure 3.1.1: A graphical display of the interrelationship between all five studies

### 3.2 Study 1 and Study 4

This section describes the research methodology of study 1 and study 4 that used interpretative phenomenological analysis (IPA) to examine the meaning of parenthood and women’s perceptions and understanding of oocytes and oocyte donation, respectively. IPA was selected because it is one of the few qualitative approaches that is compatible with cognitive psychology models, such as the TPB (Smith, 1996; Chapman and Smith, 2002; Clare, 2003). Therefore, IPA can be used in conjunction with the TPB and indeed this has



been done successfully in the past (e.g. Wyer, Earll, Joseph and Harrison, 2002) (for more information see chapter 1).

### **3.2.1 Ethical considerations**

University ethics committee approved the design of the studies and the studies complied with all ethical requirements as stated by the British Psychological Society *Statement of Ethical Principles for Conducting Research with Human Subjects* (British Psychological Society, 2000). An information sheet and informed consent form presenting details of the study were sent to all participants who expressed an interest to participate in the study. The information sheet documented the aims of the study, participants' expected involvement in the study, the researcher's responsibilities and duties and contact details. The signed consent forms were seen as 'agreement to participate' in the research and protected the rights of participants, who were free to withdraw from the study at any stage and without a reason. Participants were assured of anonymity and confidentiality and their names were changed in the transcripts to conceal their identity. A risk assessment had been carried out and no immediate hazards had been identified. However, it was possible that childless and infertile participants may have experienced moderate levels of discomfort or distress as a result of answering questions about parenthood and oocyte donation. To minimize or avoid these risks, the debrief sheet referred any participant with such issues to the University Counselling Services.

### **3.2.2 Sampling Design**

White and South Asian participants were recruited using the snowball sampling technique. 'Snowballing' is a common sampling approach used in research, particularly in the

recruitment of ethnic minority groups (Kalsbeek, 2003). Informants of the author were asked to nominate or contact their friends or relatives who may be interested in participating in the study. Please note that separate samples were recruited for study 1 and study 4.

Small samples were recruited because IPA is a model that is best suited to a small number of participants (Smith *et al.*, 1999, 2003, 2004, 2006). People under the age of 18 and people who could not speak in English were excluded from the study. Woollett (1996) argued that it is impossible for any research in the area of infertility to represent the experiences of all and the same can be applied to this research. These studies have not been designed to be representative of the views of South Asian and White populations regarding parenthood and oocyte donation. Rather they should be considered to be illustrative examples of some of the important themes and lived experiences relevant to this area of research.

### **3.2.3 Procedure**

Informants contacted their friends or family who may be interested in participating in this study. If participants indicated a willingness to take part, then a first contact was arranged (either face to face, through emails or telephone) to discuss the study and seek informed consent. Following the introduction, if participants were willing to participate, then interviews were arranged at a time and location convenient to them. Full informed consent was obtained for all participants prior to participation in the study and queries that participants had were also addressed before the interview. Participants were asked at the end of the interview whether they had any more questions or observations they wish to make and then they were debriefed. No participants withdrew from the studies.

### ***3.2.4 Data Collection***

In accordance with IPA tradition, one-to-one semi structured interviews were conducted with each participant. Interviews were conducted either in the participant's homes, the University and two interviews were conducted over the phone. Study 1 used the Reasons for Parenthood questionnaire items as a topic guide to the interviews (see appendix 1 for complete topic guide). Study 4 used key issues that emerged from study 2 and 3 and components of the TPB (as reflected in the oocyte donation questionnaire) as topic guides to the interviews (see appendix 2 for complete topic guide). As can be seen from table 3.2.1 and table 3.2.2 (summative topic guides from both studies), key concepts were introduced and participants were asked to construct meanings around these concepts in relation to their own 'lived experiences'. IPA is an interactive technique, so the author probed and prompted the participants during the interview. All interviews were tape recorded (after seeking consent), and lasted between 30 minutes to 1½ hours.

Table 3.2.1: Study 1 - A qualitative study of the socio-cultural and biological meaning of parenthood

Topic Guide
<p><b>Socio-demographic Information</b></p> <p>Participant's age, gender, ethnic background, parity, failed pregnancies, marital status, qualification &amp; employment history</p>
<p><b>Reasons for Parenthood</b></p> <p>Discuss the relevance of each item on the Reasons for Parenthood scale (fulfilment, please partner, make family, part of both of us, good home and bio drive) on reproductive decision making. Ask participants to construe meanings around these constructs. Discuss other constructs which are important to participants. Finally ask participants to rate each construct in order of importance.</p>
<p><b>Reasons against Parenthood</b></p> <p>Discuss the relevance of each item on Reasons against Parenthood scale (other things, restrict freedom, partner's wishes, career and over population) on reproductive decision making. Ask participants to construe meanings around these constructs. Discuss other constructs which are important. Finally ask participants to rate each construct in order of importance.</p>

Table 3.2.2: Study 4 - A qualitative study of women's perceptions of oocyte donation

Topic Guide
<p><b>Socio-demographic Information</b></p> <p>Participant's age, gender, ethnic background, parity, failed pregnancies, marital status, qualification &amp; employment history</p>
<p><b>Oocyte donation in general</b></p> <p>Discuss participant's knowledge and awareness of oocyte donation for treatment and research and inform them of current UK legislation and key issues.</p>
<p><b>Perception of an oocyte</b></p> <p>Discuss participant's perception of an oocyte. Do they consider an oocyte as a cell or potential life form?</p>
<p><i>Attitudes towards oocyte donation for treatment and research</i></p> <p>Discuss participant's attitudes towards oocyte donation for treatment and research, the oocyte donor and recipients.</p>
<p><i>Perceived consequences of oocyte donation</i></p> <p>Discuss participant's attitudes towards the perceived consequences of oocyte donation for treatment and research. Particularly address the presence of a [potential] genetically related child when donating for treatment and the genetic void when donating for research.</p>
<p><b>Motive for oocyte donation</b></p> <p>Discuss participant's [un]willingness to become an oocyte donor and the reasons underpinning their decisions. Discuss their perceptions of oocyte donor's motivations for donating genetic material.</p>
<p><i>Subjective norms and perceived behavioural control</i></p> <p>Discuss whether they would have social support and individual autonomy when deciding to donate their oocytes and the importance of this in their decision making process.</p>
<p><b>Disclosure and donor anonymity</b></p> <p>Discuss issues relating to the disclosure of genetic origins to donor child and the abolishment of donor anonymity.</p>
<p><b>Importance of parenthood</b></p> <p>Discuss the perceived importance of children and parenthood in relation to oocyte donation.</p>

### Importance of genetic link

Discuss the perceived importance of a genetic link between parent and child in relation to oocyte donation.

Sub-headings in italics are components of the theory of planned behaviour.

### *3.2.5 Data Analysis*

IPA (Smith *et al.* 1996, 1999, 2003, 2006) was used to analyse the interview transcripts. IPA is not a prescriptive methodology, but some suggestions to guide researchers in data analyses are provided (Smith *et al.*, 1999) and were followed. First, all interviews were audio tape recorded with the consent from each participant and then transcribed ad verbatim. IPA is an idiographic approach that is 'committed to the painstaking analysis of cases' (Smith and Osborn, 2003, pp 54). So, each interview transcript was read and re-read. Smith *et al.* (1999) suggested re-reading the transcript is necessary to become intimate with the account. During reading, the left side of the paper was used to annotate what is being narrated and to capture initial thoughts and comments about themes and ideas that emerged from the transcript. Smith and Osborn (2003) compared this to 'free textual analysis'. The process is continued, but this time the right side of the margin was used to identify important themes and often key words found within the transcripts were used to name the themes. Here initial notes were transformed into concise phrases which aimed to capture the quality of what is being narrated in the accounts and themes move to higher levels of abstraction (i.e. super-ordinate concepts). The transformation of notes to themes is continued throughout the whole transcript. The emergent themes and the accompanying data extracts were then presented on a table and connections were made between the themes. Themes were later clustered together into related groups and ordered coherently, thus super-ordinate themes begin to emerge. This process was repeated for all transcripts and all the themes that have emerged for each transcript and the accompanying data were compiled on a 'master' table and clustered together into related groups. Each

transcript was coded individually and all emerging themes were compiled in the 'master table' regardless of whether other transcripts revealed similar themes or not, so no data was lost. Finally, the 'master' table was reviewed and the most important super-ordinate themes that emerged from the table, which were significant for the majority of participants were identified. Thus, a small number of super-ordinate themes were established.

Study 1 also used the NU\*DIST package as an additional source to help categorise the results. The NU\*DIST package is a computer package designed to facilitate qualitative data analysis. The transcripts were examined in NU\*DIST for recurring themes in participant's discourses of their thoughts and perceptions of the reasons for and against parenthood. The NU\*DIST package facilitated in the IPA process because it was extremely useful in identifying and clustering themes. Each transcript was read and re-read and themes were coded using the NU\*DIST techniques. This process was repeated for all the transcripts and a comprehensive collection of themes were gathered. This aided the interpretation process because data was checked and re-checked again for consistency in interpretation.

### **3.3 Study 2 and Study 3**

This section describes the research methodology of study 2 and study 3 that assessed components of the Theory of Planned Behaviour (TPB) in intention to donate oocytes for treatment (study 2) and research (study 3) and examined the link between oocyte donation intentions and reasons for parenthood using Structural Equation Modelling (SEM). SEM has never been applied before in the oocyte donation literature and as SEM is a statistical technique used for theory testing (Bryne, 2001), it was appropriate in evaluating the application of components of the TPB to oocyte donation.

### ***3.3.1 Ethical Considerations***

Ethical approval was granted by the University ethics committee. Once again both studies complied with all ethical requirements set out by the British Psychological Society (British Psychological Society, 2000). No identifying information was obtained from the respondents, thus ensuring respondent anonymity. Informed consent was implied by the completion and submission of the questionnaires. A risk assessment was again carried out and no immediate hazards were identified. Nevertheless, attempts were made to minimise any potential risks to participants who may have experienced moderate levels of discomfort or distress as a result of answering questions about parenthood and oocyte donation. Thus, the covering page referred any participant with such issues to the Human Fertilisation and Embryology Authority (HFEA) and Samaritans and also gave the author's contact details.

### ***3.3.2 Sampling Design***

Women were recruited through the Internet. Attempts were made to select specific websites that women with and without an interest in reproductive health and oocyte donation would visit, so it would be possible to recruit a diverse but representative mix of female respondents from the general population.

### ***3.3.3 Procedure***

The Questionnaires were developed online. Links to the questionnaires were on the bottom of a web covering page, which gave information about the background and aims of the study and author's contact details. Questionnaires were posted on a number of websites



where women are more likely to visit than men. Specifically, the National Association for Pre-Menstrual Syndrome's (NAPS), Human Fertilisation and Embryology Authority's (HFEA), and The National Gamete Donation Trust's (NGDT) websites. NAPS and NGDT also emailed their members inviting them to participate in the study. A link to the online questionnaire was also attached to the email signatures of the researchers, and emails inviting University staff and students were also sent off. A number of respondents had also completed the questionnaires after finding it through Internet search engines. All respondent's data were sent to the researcher's email address. The response rates of the two studies are not known.

There were several reasons for posting the questionnaires on the Internet. The Internet has revolutionised the way research is carried out and Universities, public and private sectors are increasingly using the Internet to collect qualitative and quantitative data (Nancarrow, Pallister and Bruce, 2001). There are many benefits to conducting questionnaires online. For example, it allows for the possibility of global reach; convenience; ease of data entry and analysis; low administration costs; potential access to large samples; and potential to target populations that are difficult to reach using traditional pen and paper methods (Evans and Mathur, 2005; Lyons, Cude, Lawrence and Gutter, 2005). Response rates for sensitive topics such as sexual behaviours are higher using Internet based questionnaires than traditional pen and paper tests, because they assure greater anonymity (Daley, McDermott, McCormack-Brown and Kittleson, 2003). Further, it has also been observed that many respondents enjoy completing Internet based questionnaires (Nancarrow *et al.*, 2001). However, some disadvantages with Internet based questionnaires are that the response rates tend to be lower than questionnaires administered by hand (Nulty, 2008). Further, it has been argued that Internet users may not be representative of the general population (Wilson and Laskey, 2003). However, in many Western countries, including the

UK and US, the gap between online and offline populations is disappearing (Fricker and Schonlou, 2002). For example, it was estimated that more than 70% of Americans used the Internet in 2003 (UCLA Centre for Communication, 2003).

### ***3.3.4 Outcome Measurements***

The English translated version of the Attitudes towards oocyte donation scale (Skoog-Svanberg *et al.*, 2003a, 2003b) (appendix 3) and the Reasons for Parenthood Scale (Langdridge *et al.*, 2005) (appendix 4) were used to assess attitudes and intention to donate oocytes for treatment and women's reasons for and against parenthood, respectively in study 2. The Attitudes towards oocyte donation scale was modified and used to assess attitudes and intentions to donate oocytes for research (appendix 5) together with the unmodified Reasons for Parenthood scale in study 3. The Attitudes towards oocyte donation scale was chosen because it has been used successfully in the past (Skoog-Svanberg *et al.*, 2003a, 2003b; Purewal and van den Akker, 2006) and Skoog-Svanberg *et al.* (2003b) reported satisfactory Cronbach's alphas that ranged from .067 to .86. In addition, the Reasons for Parenthood had also demonstrated good reliability and internal consistency (Cronbach's alpha 0.84) (Langdridge *et al.*, 2005). Further, socio-demographic data were also collected (e.g. age, ethnicity, marital status, religion, socio-economic status, education level, parity, fertility status and partner's fertility status). However, some socio-demographic items such as marital status were included in the questionnaires at a later stage for study 2 (but not study 3), thus there is some missing data. Study 2 (chapter 5) will highlight exactly which socio-demographic characteristics data is missing for the specific number of participants.

#### 3.3.4.1 Attitudes towards oocyte donation

The Attitudes towards Oocyte donation questionnaire (appendix 3) included 11 subsections. Each subsection is described in detail below and the five italicised subsections were used to test some components of the TPB. The respondents rated each item on a five point Likert-type scale that ranged from strongly agree (5) to strongly disagree (1) and included a 'cannot form an opinion' (0) option. Some items are phrased negatively, so their scoring was re-coded. Scores from individual items were later summed to create a total score for different subsections. A high score represented positive attitudes and low score represented negative attitudes. Data from 528 women were used to assess the internal consistency of the measure. Tables 3.3.1 to 3.3.11 list the items under each subsection of the questionnaire and each subsection's Cronbach's alpha values are also reported.

- ❖ Attitudes towards parenthood subsection (Cronbach's alpha .70) consisted of 6 items and measured the perceived importance of children. The potential scores range was from 0 to 30 (see table 3.3.1).

Table 3.3.1: Attitudes towards parenthood

How do you feel about children?
1. Having children is the most important thing in life.
2. Having children means losing your freedom
3. A child is an expression of the love shared by two people.
4. A relationship is incomplete without children.
5. Self-fulfilment is difficult to attain if you have children.
6. Having children is the whole purpose of life.

- ❖ Attitudes towards the importance of a genetic link between parent and child subsection (Cronbach's alpha .77) measured the perceived importance of genetic ties and included four items with a score range of 0 to 20 (see table 3.3.2).

Table 3.3.2: Attitudes towards the importance of a genetic link between parent and child  
How important is the genetic link between parents and children?

7. The genetic link between father and child is important.
8. The genetic link between mother and child is important.
9. It is important to me that my child physically resembles me.
10. It is important to me that my child resembles me in terms of behaviour.

❖ *Attitudes towards oocyte donation* subsection (Cronbach's alpha .81) was one of the two 'attitudes' component of the TPB that measured positive or negative judgements about oocyte donation. The subsection included 5 items with a score range of 0 to 25 (see table 3.3.3).

Table 3.3.3: Attitudes towards oocyte donation

<i>The next set of statements relate to what you think about egg donation in general.</i>
11. If a friend/acquaintance wanted to <u>donate</u> eggs I would support her decision.
12. If a friend wanted to <u>receive</u> donated eggs I would support her decision.
13. If you are infertile, adoption should be your first choice.
14. If you can't have children of your own, you should not have any.
15. Egg donation is a good way to help childless couples.

❖ *Attitudes towards disclosure to offspring* subsection (Cronbach's alpha .68) included six items and assessed attitudes towards the disclosure of genetic origin to donor offspring. Potential scores could range from 0 to 30 (see table 3.3.4).

Table 3.3.4: Attitudes towards disclosure to offspring

Should children conceived via egg donation be informed of their genetic origins?
16. Children conceived through egg donation should have the right to know about their genetic origin.
17. The parents should decide whether or not they want to tell their child of his or her genetic origin.
18. It is in the best interest of the child that he or she never be informed of his or her genetic origin.
19. As an adult, the child should be able to find out the identity of the egg donor.
20. The child's relationship with his or her parents could damage if he or she learns of his or her genetic origin.
21. Parents should be honest with their children with regard to their genetic origin.

- ❖ Attitudes towards specific circumstances in the procedure of oocyte donation subsection (Cronbach's alpha .48) measured attitudes towards specific issues relating to oocyte donation policy and clinic recruitment practices. The subsection consisted of six items and scores ranged from 0 to 30 (see table 3.3.5).

Table 3.3.5: Attitudes towards specific circumstances in the procedure of oocyte donation  
Please evaluate the following statements with regard to egg donation.

Please evaluate the following statements with regard to egg donation.
22. Women who undergo test-tube fertilization should be asked to donate their remaining eggs.
23. Women who want to be sterilized should first be asked if they want to donate eggs.
24. Advertising via media such as newspapers is a good method to recruit women for egg donation.
25. The women who donate the eggs and the couples receiving the eggs should remain anonymous to each other.
26. The egg donor should have some relationship (family/friend) with the couple receiving the egg.
27. Only women under forty-three years of age should be able to receive donated eggs.

- ❖ Attitudes towards a recruitment advertisement subsection (Cronbach's alpha .94) assessed respondent's hypothetical responses to an oocyte donation advertisement. The subsection included four items and had a potential score range of 0 to 20 (see table 3.3.6).

Table 3.3.6: Attitudes towards a recruitment advertisement

After reading a recruiting advertisement in the morning paper concerning egg donation, would you?	
28. ...surf to the clinic's web site to get information?	
29. ...contact the clinic for more information?	
30. ...contact the clinic with the intention of donating eggs?	
31. ...attend an information meeting?	

❖ *Intention to donate* subsection measured behavioural intentions and was the intention component of the TPB. It included one item which asked whether the respondent would donate their oocytes in the future, all participants were informed of the removal of donor anonymity, responses consisted of three ordered categorical responses of 'yes', 'maybe/don't know' or 'no'). The Intention to donate question was used as the grouping variable to analyse the results, respondents were classified as 'intenders' (yes group), 'possible intenders' (maybe/don't know group), and 'non-intenders' (no group) (see table 3.3.7).

Table 3.3.7: Intention to Donate

<i>Intentions</i>
32. Could you see yourself anonymously donating eggs at some point in the future?

❖ *Attitudes towards the consequence of oocyte donation* subsection (Cronbach's alpha .70) measured beliefs about the personal and social consequences of donating oocytes and was the second 'attitudes' component of the TPB. A total of seven items were included in the subsection and potential scores ranged from 0 to 35 (see table 3.3.8).

Table 3.3.8: Attitudes towards the consequence of oocyte donation

<i>If you were to donate, would you</i>	
33. . .	be happy about helping a couple that is unable to have children by other means.
34. . .	be glad that perhaps your biological child might try to find you after 18 years.
35. . .	be happy that your genes were being passed on.
36. . .	feel as though you had made a contribution to your fellow man.
37. . .	want information regarding the well-being of the child, if any.
38. . .	brood about it for the rest of your life.
39. . .	be content for the rest of your life.

- ❖ *Subjective Norms* subsection was a tenet of the TPB and included one item that assessed social support in deciding to donate oocytes. The scores ranged from 0 to 5 (see table 3.3.9). Please note that subjective norms has been conceptualised as social support and not social pressure, as advocated by Ajzen (1991; 2002).

Table 3.3.9: Subjective norms

<i>Subjective Norms</i>
40. The important people in my life would support my decision to donate eggs.

- ❖ *Perceived Behavioural control* subsection was another component of the TPB and used one item to measure the extent to which a woman feels she can donate her oocytes. The potential score could range from 0 to 5 (see table 3.3.10).

Table 3.3.10: Perceived behavioural control

<i>Perceived Behavioural control</i>
41. It is entirely up to me whether or not I want to donate eggs.

- ❖ Attitudes towards factors that would induce women to donate subsection (Cronbach's alpha .82) measured whether specific factors (such as convenient



clinic locality) could induce women to donate. The subsection consisted of 12 items and had a score range of 0 to 60 (see table 3.3.11).

Table 3.3.11: Attitudes towards factors that would induce women to donate

What factor(s) would make you more likely to donate eggs?
42. ... as a donor you could be completely anonymous; that is, neither the couple nor the child would ever find out your identity?
43. ... you received substantial financial compensation (in addition to your actual cost?)
44. ... you could undergo the procedure at a hospital in your area?
45. ... you could get counselling?
46. ... you could speak with women who have already donated eggs?
47. ... you knew the couple to whom your eggs were being donated?
48. ... you already had children of your own?
49. ... you were asked at a routine gynaecological examination?
50. ... you had more information about what it is likely to be involuntarily childless?
51. ... the treatment period prior to the donation procedure was shorter?
52. ... the procedure was carried out at an unfamiliar hospital?
53. ... you could have information about how the child is doing in the future?

#### 3.3.4.2 Attitudes towards oocyte donation for research

The Attitudes towards oocyte donation scale was modified to assess attitudes towards oocyte donation for research (appendix 5). Many of the items were kept identical to the original scale. Specifically, Attitudes towards parenthood; Attitudes towards the importance of a genetic link between parent and child; Attitudes towards a recruitment advertisement; *Intention to donate*; *Subjective norms* and *Perceived behavioural control* subscales remained intact but pertained to oocyte donation for research. The subscales that were adapted were: *Attitudes towards oocyte donation*; Attitudes towards specific circumstances in the procedure of oocyte donation; *Attitudes towards the consequence of oocyte donation*; and Attitudes towards factors that would induce women to donate.



Further, Attitudes towards disclosure to offspring subscale was removed from the questionnaire because of the lack of appropriateness and some additional items on donation preference were included in the questionnaire. The scoring system of the questionnaire remained identical to the original. Data from 253 women were used to assess the internal consistency of the measure. The adapted subsections are described below.

- ❖ Attitudes towards oocyte donation for research (Cronbach's alpha .75) subsection included eight items and had a potential score range of 0 to 40 (see table 3.3.12).

Table 3.3.12: Attitudes towards oocyte donation for research

The next set of statements relate to what you think about egg donation for research in general.
12. If a friend wanted to receive treatment based on research using donated eggs I would support her decision.
13. If you are ill you should seek treatment using traditional methods (treatment not developed by stem cell research).
14. If you are ill you should not receive any treatment based on stem cell research.
15. Egg donation for research is a good way to help contribute to science.
16. I think infertile couples need eggs more than scientific research.
17. I would worry about the sort of research that might be done.
18. I see an egg as a potential life form.
19. Egg donation for research seems to be a waste of eggs.

- ❖ Attitudes towards specific circumstances in the procedure of oocyte donation for research (Cronbach's alpha .55). The subsection included eight items and had a score range of 0 to 40 (see table 3.3.13).

Table 3.3.13: Attitudes towards specific circumstances in the procedure of oocyte donation for research

Please evaluate the following statements with regard to egg donation for research.
20. Women who undergo test-tube fertilization should be asked to donate their remaining eggs for research.
21. Women who want to be sterilized should first be asked if they want to donate eggs for research.
22. Advertising via media such as newspapers is a good method to recruit women for egg donation for research.
23. Donated eggs should go to research for specific illnesses/conditions not infertile couples.
24. The egg donor should be fully informed about the purpose of the research.
25. Women who donate their eggs for research should remain anonymous to the researchers.
26. Women who donate their eggs should have a good understanding of stem cell research.
27. Only highly successful stem cell research teams should be able to use donated eggs.

❖ *Attitudes towards the consequence of oocyte donation for research* (Cronbach's alpha .52). The subsection consisted of seven items and a score range of 0 to 35 (see table 3.3.14).

Table 3.3.14: Attitudes towards the consequence of oocyte donation

<i>If you were to donate eggs for research, you would</i>
34. ...be happy that your donation may one day help to find a cure for diseases and illnesses.
35. ...be glad you will not have a child from donated eggs.
36. ...be happy that your genes will not be passed on.
37. ...feel as though you had made a contribution to your fellow man.
38. ...want information regarding the outcome of the research.
39. ...brood about it for the rest of your life.
40. ...be content for the rest of your life.

❖ *Attitudes towards factors that would induce women to donate for research* (Cronbach's alpha .76). A total of 12 items were included and scores ranged from 0 to 60 (see table 3.3.15).

Table 3.3.15: Attitudes towards factors that would induce women to donate for research

What factors would make you more likely to donate eggs for research?
43. ...as a donor you could not be identified by the researchers?
44. ...you received substantial financial compensation (in addition to your actual cost?).
45. ...you could undergo the procedure at a hospital in your area?
46. ...you could get counselling?
47. ...you could speak with women who have already donated eggs for research?
48. ...you already had children of your own?
49. ...you knew the research team to whom your eggs were being donated?
50. ...you were asked at a routine gynaecological examination?
51. ...you had more information about what it is like to suffer from a disease or illness?
52. ...the treatment period prior to the donation procedure was shorter?
53. ...the procedure was carried out at an unfamiliar hospital?
54. ...you could have information about the outcome of the research?

- ❖ Additional items on donation preference subsection (Cronbach's alpha .75) were not included in the original scale and measured whether women reported preferences relating to the donation type. The subscale consisted of three items and a score range of 0 to 15 (see table 3.3.16).

Table 3.3.16: Donation preference

Would you rather donate to?
Stem cell research which aims to find a cure for diseases and illness.
Research trying to improve infertility treatment.
Doing something that makes a difference.

- ❖ An additional single categorical item also asked respondents 'Would you rather donate to? An infertile couple; Research; Both; or Neither' (see table 3.3.17).

Table 3.3.17: Additional item

Would you rather donate to?
An infertile couple
Research
Both
Neither

3.3.4.3 *Reasons for Parenthood*

The Reasons for Parenthood scale (appendix 4) included six reasons for parenthood (fulfilment, please partner, make family, part of both of us, good home, bio drive) and five reasons against (other things, restrict freedom, partner's wishes, interfere with career, over population). After reviewing the literature, an additional four items were included in the reasons for parenthood (carry on family name, religious beliefs, genetically part of me and confirm femininity) and one item was included in reasons against parenthood (unwanted changes). The respondents rated each item on a five point Likert-type scale that ranged from relevant (5) to irrelevant (1) on their relative importance in the respondents reproductive decision making process. All ten reasons for and six reasons against parenthood items were later summed to create a total score for reasons for and reasons against subscale which was used in data analyses. Items on the Reasons for Parenthood scale reflected dominant and normative reasons for wanting to have children (Langdridge, 2008, personal correspondence), so a high score was indicative of supporting normative and conventional reasons for wanting to have children, whereas a low score was indicative of supporting non-normative and less conventional reasons. The potential score range for reasons *for* parenthood was from 10 to 50 and reasons *against* parenthood was 6 to 30.

❖ Reasons for Parenthood (Cronbach's alpha .89) (see table 3.3.18).

Table 3.3.18: Reasons for Parenthood

I want/wanted to have a child because	
Raising a child would be fulfilling.	Biological drive.
My partner would be pleased if I had a child.	I want a child that is genetically a part of me.
I feel it would make us a family.	My religious beliefs lead me to want a child.
It would be something that is a part of both of us.	I want a child that is genetically a part of me.
I would give a child a good home.	To confirm my femininity.

Cronbach's alpha data from 528 respondents

❖ Reasons against Parenthood (Cronbach's alpha .89) (see table 3.3.19).

Table 3.3.19: Reasons against parenthood

I do/did not want to have a child because	
I think there are more important things in life.	Having a child would interfere with my career.
A child would restrict my freedom to do things I enjoy.	I am concerned about over population.
My partner does not want a child.	A child would bring too many unwanted changes into my life.

Cronbach's alpha data from 528 respondents

### 3.3.5 Data Analyses

Chi-square tests were performed to compare socio-demographic data (e.g. ethnicity, marital status, religion, socio-economic status, education level, parity, fertility status and partner's fertility status) between the three main groups of women; Intenders, Possible Intenders and Non-Intenders. Analysis of Variance with Student-Newman-Keuls (SNK) contrasts were used to compare groups on age, different sub-sections on the Attitudes towards oocyte donation scale and the Reasons for Parenthood scale. Logistic regression analyses were performed to evaluate factors identified by the Attitudes towards oocyte donation (for treatment and research), Reasons for Parenthood scale and socio-demographic data that may predict women's intention to donate. A p-value of  $<0.05$  was

considered statistically significant, because it is the usually accepted value within psychology literature. To examine the impact of socio-demographic variables, TPB components and Reasons for Parenthood subscales on intention to donate, Structural Equation Modelling (SEM) analyses were used (for a review see Byrne, 2001). SEM analyses were performed on AMOS 7.0. A number of different models were tested and the final model was selected using overall model fit indices, such as the chi-square value, the goodness of fit index (GFI), comparative fit index (CFI), Normed Fit Index (NFI), root mean square residual (RMSEA), the modification indices, and the distribution of residuals. An adequate model is indicative when the GFI value is close to 1.00, CFI and NFI are >0.95, and RMSEA value is less than .05 (Byrne, 2001).

### **3.4 Study 5**

This section will describe the research methodology used for study 5. Study 5 examined the effect of gain and loss framed messages on women's intention to donate their oocytes. Key findings obtained from studies 1, 2, and 3 were used to develop the messages. The gain framed message highlighted the benefits associated with being an oocyte donor (see table 3.4.1), whereas the loss framed message highlighted the cost associated with not being a donor (see table 3.4.2). Both framed messages incorporated components of the TPB. The framed messages were developed after reviewing a number of recent examples of successful framed messages (e.g. Reinhart, Marshall, Feeley and Tutzauer, 2007; Chang, 2007; Brunton, 2007; Lorez, 2007; O'Connor, Ferguson and O'Connor, 2005).

#### **3.4.1 Ethical Considerations**

Ethical approval was granted by the university ethics committee and met all ethical requirements as stated by the British Psychological Society (British Psychological Society,

2000). No identifying information was obtained from the respondents, thus ensuring respondent anonymity and informed consent was implied by the completion and submission of the questionnaire. Although a risk assessment revealed no immediate hazards, it was possible that a small number of women may experience moderate levels of discomfort or distress as a result of answering questions about oocyte donation, particularly if they were infertile or had suffered reproductive traumas. So, to minimize these risks, the covering page referred any participant with such issues to the Human Fertilisation and Embryology Authority (HFEA) and Samaritans and also gave the author's contact details.

#### ***3.4.2 Sampling Design***

Women were recruited through the Internet. Attempts were made to recruit young women of child bearing ages and from different ethnic backgrounds, particularly women from South East Asia. Previous research suggests that there are many similarities between South Asian and South East Asian cultures relating to child bearing (e.g. Bhopal, 1998; Liamputtong and Nakssok, 2002; Bharadwaj, 2003; Liamputtong, Yimyam, Parisunyakul, Baosoung and Sansiriphun, 2004; Culley, Rapport, Katbamna, Johnson and Hudson, 2004). Thus, the recruitment of South East Asians for opportunistic reasons was not considered to be problematic. Women under the age of 18 years old were excluded from the study.

#### ***3.4.3 Procedure***

The study was developed online. Links to either the loss frame or gain frame condition were on the bottom of a covering page, which gave information about the background and

aims of the study and author's contact details. Participants were recruited using a number of different methods which included the snowball sampling technique; using Internet social forums; and sending out an email inviting students at the university to participate in the study. Participants were allocated to either a gain frame or loss frame condition. So, some groups of participants were sent gain conditions (either through emails or links on Internet social forums) and other groups were sent loss conditions (again either through emails or Internet forums). Attempts were made to be as systematic as possible, thus to ensure relatively equal numbers in each group but not to incur any selection biases. The response rate of the study is again not known.

#### **3.4.4 Outcome Measurements**

All of the five TPB components (*Attitudes towards oocyte donation; attitudes towards consequences of oocyte donation; subjective norms; perceived behavioural control; and intention to donate*) of the Attitudes towards oocyte donation questionnaire, were used to provide a baseline measurement of women's attitudes and intention towards oocyte donation for treatment. After completing the questionnaire, participants read either a gain framed message (Table 3.4.1) or loss framed message (Table 3.4.2) and completed four questions on their attitudes and willingness to donate after reading the message (Table 3.4.3) (see appendix 6). Unlike studies 2 and 3, the respondents rated each item (including the oocyte donation scale) using a ten point likert scales of agreement (instead of five point) with higher scores indicating positive attitudes. Some items were negatively phrased and reverse scored. Socio-demographic data were also collected (c.g. age, ethnicity, marital status, religion, socio-economic status, education level, parity, fertility status and partner's fertility status).



Table 3.4.1: Gain Framed Message

Gain Frame
<p>It is estimated that one in seven couples will at one point in their lives experience difficulties in trying to have a child. There are approximately 30,000 people having fertility treatment each year in the UK and it is estimated that 800 babies are born from egg, sperm or embryo donation.</p> <p>Egg donation is used by women who are unable to use their own eggs. For example, some women may not produce any eggs or they produce eggs of poor quality which means they are unable to get pregnant or maintain a pregnancy. Further, some women may carry an inherited genetic disease which means they cannot use their own eggs because of the fear of transmitting the disease onto the child. So, these women will rely on the donated eggs from other women to fulfill their dreams of motherhood. Unfortunately, there is an acute shortage of donated eggs in the UK. This means some women will be denied the opportunity to have children because of the lack of donated eggs.</p> <p>All egg donors in the UK are altruistic donors (there is no financial reward to donate). Donors have often reported that donating their eggs to a couple is a rewarding experience. For many couples having children is the most important thing in their lives and egg donation is an excellent way to help childless couples and to contribute to human kind. Donors should be fit, healthy and under the age of 35. Donors do not have legal responsibility towards the child. The couple who receive the donated eggs will be the parents of the child. However, the child will be genetically related to the donor and the donor's genes will be passed on. Also, the child could seek out the donor once they've reached 18 years of age.</p> <p>Most clinics that recruit egg donors have counsellors available to support and talk to donors and assess whether egg donation is the right choice for them. Women considering donating their eggs should think carefully if they want to become an egg donor because it is entirely up to them whether they wish to become an egg donor or not. However, informing their decisions to friends and family is also very important.</p> <p>Women who receive donated eggs can increase their chances of conceiving by up to 50% and women over the age of 40 are 5 times more likely to conceive using a donor egg. It is estimated that for every woman who donates her eggs, up to ten families can be treated. Egg donation therefore allows childless couples the opportunity to fulfill their dreams of parenthood and significantly increase their quality of life.</p>

Table 3.4.2: Loss Framed Message

Loss Frame
<p>It is estimated that one in seven couples will at one point in their lives experience difficulties in trying to have a child. There are approximately 30,000 people having fertility treatment each year in the UK and it is estimated that 800 babies are born from egg, sperm or embryo donation.</p> <p>Egg donation is used by women who are unable to use their own eggs. For example, some women may not produce any eggs or they produce eggs of poor quality which means they are unable to get pregnant or maintain a pregnancy. Further, some women may carry an inherited genetic disease which means they cannot use their own eggs because of the fear of transmitting the disease onto the child. So, these women will rely on the donated eggs from other women to fulfill their dreams of motherhood. Unfortunately, there is an acute shortage of donated eggs in the UK. This means some women will be denied the opportunity to have children because of the lack of donated eggs.</p> <p>All egg donors in the UK are altruistic donors (there is no financial reward to donate). Donors have often reported that donating their eggs to a couple is a rewarding experience. For many couples having children is the most important thing in their lives and if women do not donate their eggs, they cannot help childless couples and contribute to human kind. Donors should be fit, healthy and under the age of 35. Donors do not have legal responsibility towards the child. The couple who receive the donated eggs will be the parents of the child. However, the child will be genetically related to the donor and the donor's genes will be passed on. Also, the child could seek out the donor once they've reached 18 years of age.</p> <p>Most clinics that recruit egg donors have counsellors available to support and talk to donors and assess whether egg donation is the right choice for them. Women considering donating their eggs should not refrain from thinking carefully if they want to become an egg donor because it is entirely up to them whether they wish to become an egg donor or not. However, it is important not to neglect informing their decisions to friends and family.</p> <p>Women who do not receive donated eggs can decrease their chances of conceiving by 50% using their own eggs and women over the age of 40 are 5 times less likely to conceive compared to women using an egg donor. It is estimated that for every woman who does not donate their eggs, up to ten families can be denied the opportunity for treatment. By not receiving egg donation, childless couples are denied the opportunity to fulfill their dreams of parenthood and significantly decrease their quality of life.</p>

- ❖ **Post-message intention measure** (Cronbach's alpha .64). A total of 4 items were included and the scores ranged from 1 to 40. The scoring options ranged from 1 (Disagree) to 10 (Agree) (see table 3.4.3).

Table 3.4.3: Framing post-condition measurements

Please select the box that best reflects your opinion for each item
An egg donation message would not influence my decision to become an egg donor?
Reading an egg donation message like this makes me want to become an egg donor?
Reading this message has influenced my feelings about egg donation?
After reading this message I cannot see myself donating my eggs at some point in the future?

### 3.4.5 Data Analyses

Chi-square tests were performed to compare demographic data between women in the gain and loss condition. T-Tests were performed to compare differences between participants on components of the TPB. Simultaneous regression analysis was carried out to investigate whether TPB components and socio-demographics characteristics predicted pre-intention to donate. Subsections of the Attitudes towards oocyte donation scale (pre-intention to donate and attitudes towards oocyte donation in general) were used to control for post framed message intentions. An analysis of covariance (ANCOVA) was conducted with post message intentions as the dependent factor, message framing serving as the between subject factor, and participant's pre-attitudes and intentions as the covariate. A p-value of <0.05 was considered as statistically significant. Finally, SEM analyses were conducted for the gain condition and loss condition in attempts to establish how the different framed messages influenced post message exposure intentions. The same SEM statistical analytical techniques that were used in studies 2 and 3 were also used for this study.

The next chapters (4 to 8) describe the studies in detail. Each study chapter starts with its own introduction, followed by less detailed method and data analyses sections (however includes more information on participants), ending with results and discussions. The final chapter (chapter 9) draws together the results of all study chapters (4 to 8) and integrates and interprets the data into existing research literatures. First, the next chapter (chapter 4) will describe study 1 which is a qualitative investigation of the meaning of parenthood.

## 4. Study 1 The Socio-cultural and biological meaning of parenthood<sup>4</sup>

### 4.1 Summary

As has been shown in chapter 1, parenting a child is one of the most universal, common and fundamental assumptions the majority of men and women make from an early age about their future. This study qualitatively assessed the meaning of parenthood of post modern British individuals of different ages, gender, ethnic backgrounds and parity. The results of the Interpretative Phenomenological Analysis revealed a number of common ideologies about parenthood. The commonest theme was the interpretation of parents as selfless beings. Parenting was believed to be '*Fulfilling*', yet participants demonstrated ambivalence and confusion towards '*Biological Drive*' as a reason for parenthood. All participants discussed the importance of a '*Joint Decision*' in deciding to have a child. Finally, a theme of 'being prepared for parenthood' was also evident. Further, a number of specific age, gender, parity and cultural differences emerged in how individuals interpret and experience parenthood. Results demonstrated that modern British women and men continue to endorse traditional and romantic attitudes towards parenthood.

### 4.2 Introduction

Fertility trends in Western Europe have changed over the last few decades. Birth rates have been declining, with a rise in the number of people delaying parenthood and an increase in the number of couple's seeking assisted conception. In light of these changing trends and demands, early studies investigated the value of having children (e.g. Hoffman, 1975;

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<sup>4</sup> Purewal, S., & van den Akker, O.B.A. (2007). 'The socio-cultural and biological meaning of parenthood'. Journal of psychosomatic obstetrics and gynaecology. 28, (3), p. 79-86. (Appendix 7).

Hoffman and Manis, 1979) and motivation for parenthood to be able to predict fertility trends in a rapidly changing and dynamic society. Research has since progressed from merely listing the values and costs of having children, to incorporating intentions and attitudes into parenthood decision making, not only to predict fertility behaviour but also to understand the motives of couples seeking infertility treatment (Langdridge, Connolly and Sheeran, 2000).

#### ***4.2.1 Reasons for Parenthood***

As described in the Introduction chapter, a number of scales have developed over the last three decades that have assessed the reasons or motives for parenthood (the terms 'reasons' and 'motives' have been used interchangeably by researchers to refer to the conscious thought or basis underlying the decision to have a child) (e.g. Hoffman, 1975; Edelman, Humphrey and Owens, 1994; van Balen and Trimbos-Kemper, 1995; Stöbel-Richter, Beutel, Finck and Brähler, 2005). Langdridge, Sheeran and Connolly (2000) examined the reasons behind the intentions to have children. Building on their previous work, Langdridge *et al.* (2005) surveyed white married childless couples to further understand why they would or would not want to have a child, leading to the development of an 11 items scale. The scale included six reasons for parenthood (*fulfilment, to please partner, make family, part of both of us, good home, and biological drive*) and five reasons against (*other things, restrict freedom, partner's wishes, interfere with career, and concern over over-population*), and demonstrated good reliability.

However, any list of reasons or motives does not provide an insight into the contextual interpretations preceding an individual's arrival at their reasons; which are more important; what underlying experiential factors determine them; or the meaning attached to these

reasons. Past studies have also made common and implicit assumptions that an individual possess a fixed attitude or belief towards parenthood and that quantitative measures will provide researchers with a measurement of participant's core beliefs and attitudes, which can then be predicted (e.g. van Balen and Trimbos-Kemper, 1995; Langdridge *et al.*, 2005). The need to evaluate this subject beyond categorical responses and beyond an analysis of the verbal statements (through discourse analyses), is addressed in the present study through an interpretative determination of the subjective processes operating contextually. Since past research has also indicated there may be ethnic (e.g. Hoffman and Manis, 1979; Culley, Rapport, Johnson, Katbamna and Hudson, 2004; Purewal and van den Akker, 2006; van Rooij, van Balen and Hermanns, 2006), gender (Bos, van Balen and van den Boom, 2003) and age (van Balen, 2005) differences in the desire for parenthood and differences between voluntary and involuntary childless couples are also evident (Culley *et al.*, 2004; van Balen, 2005), these factors are addressed in the present study. Interpretative Phenomenological Analysis (IPA) (Smith, 1996; Smith, Jarman and Osborn, 1999; Smith and Osborn, 2003; Eatough and Smith, 2006) was used so that the contextual meaning of differences between and within individuals could be delineated. The aims of this study were to enhance the existing understanding of parenthood and provide a source of knowledge to help interpret the quantitative investigations on attitudes towards oocyte donation for treatment (chapter 5) and research (chapter 6). In addition, this study would also qualitatively validate the Reasons for Parenthood scale, which was used in both of the quantitative studies.

## **4.3 Method**

### ***4.3.1 Participants***

Men and women with and without children from White and Indian backgrounds, in their twenties to forties were recruited using the snowball sampling technique. This report presents the results of 13 participants (table 4.3.1). As can be seen from table 4.3.1, six participants were female and seven were male between 21 and 44 years of age (mean= 33 Years). Eight participants described their ethnicity as Indian and five as White. Five participants had at least one child and eight participants had no children. The majority of the participants were married, the remaining were in long term relationships (3) or were single (3). Two participants reported that they or their partner had had a miscarriage. No participants reported a diagnosis of sub-fertility. People under the age of 18 and people who could not speak in English were excluded from the study.

### ***4.3.2 Procedure***

This study was carried out during 2006. The procedure has been described in detail in the method chapter (3) of this thesis. However, it is important to note that ethical approval was granted by local university and informed consent was obtained for all participants prior to participation. Further, all participants were fully debriefed following the interview.



Table 4.3.1: Demographics of Participants

Name	Age	Gender	Ethnicity	Children	Failed Pregnancies	Marital Status
Neelam	24	Female	Indian	0	0	Long term boyfriend
Sandeep	25	Female	Indian	1	0	Married
Baljinder	24	Male	Indian	0	0	Single
Randeep	25	Male	Indian	1	0	Married
Kam	35	Female	Indian	2	1	Married
Pinderjit	43	Female	Indian	0	0	Married
Naveen	37	Male	Indian	0	0	Single
Manjinder	39	Male	Indian	2	-	Married
Elizabeth	26	Female	White	0	0	Single
Nathan	21	Male	White	0	0	Long term girlfriend
Jenny	44	Female	White	0	0	Divorced, now with long term boyfriend
Jason	43	Male	White	2	1	Re-married
Stan	40	Male	White	0	0	Married

#### 4.3.3 Data Collection and Analyses

Once again although data collection and analyses has been described before (chapter 3), a brief summary is provided below. In accordance with IPA tradition, interviews were conducted individually using the Reasons for Parenthood items as a topic guide. Concepts were introduced and participants were asked to construct individual meanings around these

in relation to their own reproductive decisions, encouraging them to talk about reasons behind their decisions, past experiences and influences, which were then picked up and interpreted by the researcher and used to construct further probes. All interviews were tape recorded, and lasted between 30 minutes to 1½ hours. Names were changed in the transcripts to protect the participant's anonymity.

Interpretative Phenomenological Analysis (IPA) (Smith, 1996; Smith, Jarman and Osborn, 1999; Smith and Osborn, 2003; Eatough and Smith, 2006) is an ideographic approach which involves in-depth analysis of participant's attempts to describe their cognitive and affective actions and reactions to the life experience they are facing (Fadé, 2004; Smith, 2006, personal correspondence). Interviews were transcribed and initial thoughts and comments about themes and ideas that emerged from the transcripts and from reflection were captured on one side of the paper, and the other side was used to identify important themes through key words found within the transcripts. NU\*DIST (a program designed to facilitate qualitative data analysis) was used as an additional source to help categorise the results. The transcripts were examined in NU\*DIST for recurring themes in participant's discourses of their thoughts and perceptions of the reasons for and against parenthood. The themes and accompanying data extracts were presented on a table and clustered together into related groups. This process was repeated for all transcripts so that all themes (and keywords) were coded individually and all emerging themes were compiled into a master table regardless of whether other transcripts revealed similar themes or not, so no data were lost. The master table was reviewed and the most important themes that emerged from the table, which were significant for the majority of participants were identified, and are described below in the results section.

#### ***4.3.4 Reflexivity***

IPA methodology recognises that the subjectivity of the researcher is intimately involved in the scientific research being conducted (Smith and Osborn, 2003). Briggs (1986) argued that the research data is a joint product by the researcher and participant and the social identities of both parties must be recognised in the research context. In this case, the researcher is a single, nulliparous, British South Asian female who shared a similar ethnic background to the South Asian participants and a similar national/cultural background to the White participants. The social identities of participants have been described in Table 4.3.1. Consideration was given to the identity of the researcher and potential for power imbalance. The interviews were therefore semi-structured and at a location of the participant's choosing, in order to facilitate collaboration and enable participants to have control over the discussion.

### **4.4 Results**

#### ***4.4.1 Commonalities in thematic constructs across participants***

Five super-ordinate themes emerged; parenting as selfless (4.4.2); the fulfilling role of parenting (4.4.3); the importance of biological drive and genetic ties (4.4.4); the importance of joint decision making (4.4.5); and being prepared for parenthood (4.4.6). Further, four themes also emerged which captured participant's interpretations of parenthood which were reflective of their age-related life experiences (4.4.7), parity-related life experiences (4.4.8), ethnicity-related life experiences (4.4.9) and gender-related life experiences (4.4.10). All emergent themes and some accompanying data are discussed below.

#### 4.4.2 Selfless

The commonest theme was the interpretation of parents as selfless beings, who sacrifice their own happiness and needs for their children. Interpretations were differentiated between those who were willing to be selfless and those who were not. For example, parous participants described their lives centring on the child and their own needs and desires coming second or not at all (see Randeep and Manjinder's quotes), whereas nulliparous participants described themselves as being too 'selfish' to have children in the past or at the present (see Jenny below).

*"You're doing something for someone that's meaning to life. You're not just thinking about yourself or your partner, you're thinking about a child now"* Randeep, ♂

*"...Erm it it's not about you any more, it about somebody else. Yeah so in that sort of sacrifice, you can't do the things I would be doing beforehand, erm being individualist and only worrying about me. Whereas, now your focus is more on somebody else."*

Manjinder, ♂

Jenny did not want children, her reasons were:

*"J: Probably purely selfish reasons really."*

*I: WHAT WERE YOUR SELFISH REASONS?*

*J: Erm because I just wanted to do what I wanted to do and I felt the responsibility of children would probably hold me back."*

Jenny, ♀

#### 4.4.3 Fulfilling

There was a general consensus in participant's discourse that having a child would be '*Fulfilling*'. A range of constructs emerged, the most common clustered interpretations were 'to nurture', 'pass on knowledge' and that parenthood would be a 'rewarding experience' (see figure 4.4.1). As can be seen from figure 4.4.1, these emerging clusters were interesting because with the exception of 'love' and 'leave something behind', all centred strongly on enjoying the role of parenting without any specific mention of qualities of the child (genetic relatedness) and surprisingly little reference to the child itself, contradicting the selflessness concepts somewhat(see Neelam's excerpt below).



Figure 4.4.1. Participant's reasons for 'why having a child would be fulfilling?'

*"Because you could sort of erm teach them what you know, sort of manners and bring up somebody that [...] right for society and things really.... I'm working with kids all the time and some children that I think that erm haven't got that and it would be nice if had somebody that taught them and guided them through properly"*

Neelam, ♀

Neelam hesitantly tried to emphasize a sense of achievement she would have if a child turned out well, by using examples external to herself (society, work), whilst clearly believing she could teach / guide them with proper manners.

#### ***4.4.4 Biological Drive and Importance of Genetic link***

There was nuance of ambivalence and confusion towards *Biological Drive* as a reason for parenthood in participant's discourses. Repertoire incorporated denial on the one hand, and discourses such as a desire to have a child that is 'part of them and their partner'; a 'strong preference to have their own child rather than adopt or use sperm/oocyte donor' and a 'belief that they would be able to 'bond' with the child better or 'relate' to the child more if the child was biologically / genetically related to them'. For example, Nathan denied a biological drive had any bearing on his reproductive decision making. He believed a biological drive referred to fulfilling an instinctive need which would need satisfying, and that evolutionary and cultural developments have overridden primitive biological needs.

*"I suppose it's hard to say because you don't wake up one morning and think I have an enormous biological drive to have some children or eat a sandwich or something like that"*

Nathan, ♂

He *also* argued that having a child would be fulfilling because he could '*leave someone behind after you've gone*' demonstrating a recurrence of the importance of a genetic link emerging theme.

*I: IN WHAT WAYS DO YOU THINK IT WOULD BE FULFILLING?*

*N: Just to bring life into the world and you know, I think it's a way of leaving your mark in a way, I suppose in a way, I don't really know.*

*I: WHAT DO YOU MEAN BY LEAVING YOUR MARK?*

*N: It's just nice to leave someone behind after you've gone kind of thing"*

Nathan, ♂

Since many participants constructed parenthood as selfless and altruistically motivated, it may have been difficult for them to acknowledge a preference for a genetically related child because it would assume they had self-centred interests in having children. When Kam was first introduced to *bio drive* as a possible reason for wanting to have children in the interview, her response was flippant, however when further probed she became evidently more uncomfortable and frustrated with this topic. Her response was strained and there was a clear shift in her tone and rhythm of speech.

*"I: IS THAT [bio drive] A REASON WHY YOU DECIDED TO HAVE KIDS?*

*K: [...] I suppose and I be vague on this answer. Ask me something different, ask me something I can answer.*

*I: [laughs] BUT I WANT TO ASK YOU ABOUT THIS. ERM WHY WAS IT IMPORTANT TO YOU THEN TO HAVE CHILDREN THAT WERE PART OF... YOU? HOW DOES THAT MAKE A DIFFERENCE?*

K: *[Speaks quickly] Well its poor having kids that nave come from somewhere else when I can have my own. As much as you love having around everyone else's kids, but if there not your own, by the end of the day they'll go home to where they belong. So, it's not the same is it?*

I: *WOULD YOU EVER CONSIDER ADOPTION?*

K: *"No"*

Kam, ♀

#### **4.4.5 Joint Decision**

A recurring, clustered discourse that emerged from several individuals concerned the importance of a Joint Decision in deciding to have a child. *'Having (or not having) a child to please your partner'* was considered a wrong and inappropriate reason for parenthood. The fear of jeopardising the relationship between the couple or/and child appeared to be the most important factor underlying the need for a Joint Decision in deciding to have /not to have a child.

*"having a baby is very much a two way thing, if one partner doesn't want a baby then erm it can create many problems this can't it?...and if one of you doesn't, then the partnership gonno fail because the partnerships got no where to go"*

Jason, ♂

#### **4.4.6 Preparedness**

Most participants did not consider the 5 reasons *against* parenthood as important or relevant, and found discussing them difficult. However, they did strongly argue that they



would only have a child when they were 'ready' to have children. All nulliparous participants said they would only have a child once they were mentally prepared for it, and could provide the child with a good home, stable environment and support the child emotionally and financially.

*"...I wouldn't have a child now because I wouldn't be able to give it a good home...I don't have a house now so it be a reason why I wouldn't have a child now. But I presume if I would... once I have like secure setting and stuff like that, then it would be, I would have a child"*

Elizabeth, ♀

There were also some differences in discursive thoughts about the reasons for and against parenthood and in the interpretation of parenthood, which appeared to reflect participant's individual life experiences and subjectivity.

#### ***4.4.7 Age-related life experiences***

The language of participants who were young and nulliparous suggested they interpreted parenthood as a special and unique bond between parent and child and as a uniting symbol of the couple's love and affection for each other. For example, they consistently and passionately discussed the symbolic significance of having a child which is '*part of both of them*', as a genetically linked child and the perception that a child would bring them closer together.

*"...a child someone we both care and it's...and it be a big part of us. So yeah for sure...Yeah becouse we love each other, it'll be o symbol of our love"*

Young ♂

#### **4.4.8 Parity-related life experiences**

Parous and nulliparous older participant's discourses also reflected a consensus that *Part of Both of Us* was the most important reason for having children, although their language and underlying discourses were based on interpretations from life experience, lacking in younger, nulliparous participants reflecting a grounded and somewhat more realistic assessment of the child's contribution to their marital relationship.

*"Hmm I would be wary of that as a reason for having kids erm while it's actually correct to say yeah kids are part of both of you erm it's just to my mind sounds like it's being used as a erm I dunno like something to fix a relationship that's not terribly great you know? Or maybe someone's feeling insecure and they go 'oh well if we've got this things and it's a part of both of us then it'll make me feel more secure he or she won't run off' or it seems almost like a sticking plaster you know to say that to my mind"*

Stan, ♂

Subtle differences in interpretations of the importance of '*part of both of us*' were also apparent with nulliparous individuals stressing the genetic tie, whereas older parous participants, for example, being more matter of fact:

*"I mean I understand that the child is made from two people, but I don't think it would erm it's doesn't hold that much significance for me"*

Sandeep, ♀

#### **4.4.9 Ethnicity-related life experiences**

Only two White participants indicated that the reasons against parenthood were relevant to their own reproductive decisions; Jenny and Stan; White voluntary childless participants in their forties.

*"... I wanted to continue with travel and career...my husband didn't want any more children although he got four children from his pervious marriage. So I respected his decision"*

Jenny, ♀

*"...it's just not something that's really appealed to me... there's loads of other things I wanna do, you know just get on and do other things"*

Stan, ♂

However, when probed about their decision to remain voluntarily childless, they gave mixed responses and behaved less confident. Although, both believed they had made the right choices in life, Jenny expressed feelings of regret and resentment because her ex-husband went on to have more children within another relationship and Stan spoke about being open to persuasion, if his partner decided to have children.

*"I: DO YOU REGRET THAT DECISION [NOT TO HAVE CHILDREN]?"*

*J: I do now, knowing what I know now, it's because we've spilt up he's [ex-husband] now had another child...I do regret that but you know that's me"*

Jenny, ♀

*"I'd be more open to the idea of having kids if I was with a partner who was younger and really wanted them, I can probably be persuaded"*

Stan, ♂

Unlike Stan and Jenny, participants of South Asian origins believed children were the most important things in life and they struggled or refused to think of other things in life which could be just as, or more important.

*"what other things can there be more than having a children really?...because as far as the nation what could be more important: Money? Car? Home?...Luxury? Erm which are all materialistic really...so I think that's wrong. There won't be no other reasons really, you get me?"*

Baljinder, ♂

South Asian males in this study also asserted that the continuation of their family name and line through the *genetic link* was a focal reason for wanting to have children. None of the females and only one White male (Nathan) in the sample suggested such a link or mentioned the importance of continuing the family lineage.

*"Erm again it's it's the life cycle. So, carries on your family's name [...] in the future, if you die then that's it your family name stops"*

Naveen, ♂

However, it is possible that White participants in this study believed it was unacceptable to say they would prefer their own genes above those of others, resulting in a proportion not talking about it because unlike some of the Asian men in our sample, they could not use 'the cultural expectation of a blood line' as a hook to hang the desire for a genetic link on. For example, Baljinder discussed the importance of a genetically related child in context of Asian tradition where children are expected to care for their elderly parents.

*"because in our culture my parents have looked after me and it's my turn to look after my parents, so it will be the same concept with me. When I'm 40, my kids will be 20 and he'll look after me as I'm getting older"*

Baljinder, ♂

#### **4.4.10 Gender-related life experiences**

Nearly all women in the sample identified with the concept to '*Make a Family*' as a good reason for parenthood. There was a strong consensus that 'children make a family'. Particularly for women, having children would 'complete', 'extend', 'enhance' 'make whole' their family. The overwhelming emerging themes underlying '*to make a family*' was that women felt that children would bring something into their family which is currently missing, and help to 'complete' their family.

*"I like to have an extended family like that... like it would be mine and my partner's or like my parents can have grandchildren, it will just make the family bigger and be a part of you"*

Neelam, ♀

In contrast, some men were suspicious of this reason, particularly Stan, who argued that this reason may be used by women to manipulate men into relationships. Stan appeared to feel insecure in his interpretations of women's needs.

*"...sounds to me a bit like it's it's trying to fix something that isn't quite right...erm I suppose that comes from just like erm perhaps watching things on telly or reading things in newspapers where you get that impression of that's what some woman have done as they they they have kids because it make the bloke stick around or something you know that kind of manipulation"*

Stan, ♂

#### **4.5 Discussion**

This study set out to determine how different individuals perceived and interpreted parenthood and how their individual, social and cultural context shaped these interpretations and constructs. Participants shared a common belief that parenthood was desirable, natural, and represented an image of selflessness and sacrifice consistent with previous quantitative studies (Hoffman, 1975; Hoffman and Manis, 1979; Langdridge *et al.*, 2000; Edelmann, Humphrey and Owens, 1994; van Balen and Trimbos-Kemper, 1995; Stöbel-Richter, Beutel, Finck and Brähler, 2005). In addition, participant's reasons for wanting to have children also reflected socio-cultural values regarding women's and men's

roles as mothers and fathers (Ulrich and Weatherall, 2000).

A number of key issues emerged; Self disclosure was easier when individuals discussed socially accepted normative interpretations of parenthood - sharing idealised notions of parents as 'selfless' beings who sacrifice, nurture and guide. This idealised notion of (selfless) parenthood has been observed by other authors (e.g. Oakley, 1979; Woollett, 1991; Brown, Small and Lumley, 1997; Marshall, Godfrey and Renfrew, 2007), and appears to indicate a collective construction of parenthood which advocates the desirability of having children and the socio-culturally perceived positive attributes of being a (giving or selfless) parent, rather than (self focused) fulfilling internal or external needs

However, discussions were more strained, complicated and even contradictory when participants discussed their own personal position on concepts allied to self interest - as in the genetic link, or the manipulation of instinct over reason. A genetically related child was a preferred child. However, it is also possible, that participants were making assumptions that a child would be genetically related to them, because they did not have a need to construct a reality based on non genetic offspring as has been discussed in other research (van den Akker, 2007), and is shown by Kam's discomfort in discussing a genetic link.

Young people and women's interpretations of motherhood in this study were influenced by romantic images, and women also perceived the meaning of fulfilment as having more positive depth than males. Women were more likely to be fulfilled with than without a child, showing how their identity as women continues to hinge on motherhood supporting other research in traditional (Hoffman and Manis, 1979) and modern women (van Balen and Trimbos-Kemper, 1995; Letherby, 2002; Smith, 1999). Young individuals interpreted parenthood as a special and unique bond between parent and child and as a uniting symbol

of the couple's love and affection for each other. For example, they consistently and passionately discussed the symbolic significance of having a child which is '*part of both of them*', as a genetically linked child and the perception that a child would bring them closer together, also found previously (Hoffman and Manis, 1979), particularly in younger women (van Balen, 2005).

The different interpretations of having children as part of both of us, or as important from a relationship point of view between parous and nulliparous individuals mirrors recent explorations of the importance of a genetic link in infertile participants. van den Akker (2007) suggests that infertile people are faced with genetic link choices which they have to interpret within the harsh reality of the most feasible option to overcome childlessness (which may consist of 3<sup>rd</sup> party involvement). They need to cognitively restructure how they perceive the constructs of motherhood and fatherhood, by constructing new realities (Strathern, 2002). Fertile people, on the other hand, do not see a genetic link in the same way, because their life experiences have not provided a need to '(re)consider' its importance. Consequently previous research reports the importance of a genetic link differently, depending on the contextual differences in which the questions are asked.

Decisions to remain childless were limited to White participants and were explained within the context of changing priorities (lack of control –Jenny; world views - Stan) over time. For example, they described that when they were younger, there were other important things in life, they feared a child would restrict their freedom or interfere with their careers (indicating their need at the time to be in control, and inability or unwillingness to be selfless), and in Jenny's case (a concomitant lack of control demonstrated by her additional explanation), the partner does not or did not want a child and Stan was additionally concerned with over population. Previous studies have also shown many people express



ambivalence towards having children during their most fertile years because of other life priorities and report there was never a 'good' time to conceive (Earle and Letherby, 2007). Gillespie (2003) also suggested that for some women the decision to remain childless was embedded in a rejection of traditional notions of femininity and a quest for personal meaning in life through achieving other life goals. These discourses provided an excellent example of the limitations of the common interpretations of some (but not all) quantitative observations. For example, attitudes against parenthood need to be interpreted as one 'being able to imagine' the concept of wanting / not wanting children, set within the context of one's own experiences, cognitions, social demands and ability or willingness to change one's position on parenthood. However, in support for the Reasons for Parenthood scale in assessing parenthood desires, many participants were also quite clear and confident in their reasoning behind their decision to have or not have a child. Participants were able to articulate clearly which reasons they believe were relevant or irrelevant in their reproductive decision making process.

South Asian participants in this study responded with a sense of socio-cultural identity prevalent even amongst second generation British South Asians. Within South Asian communities, lineage and genetic or blood links are necessary elements of the South Asian culture which most wish to maintain and partake in. Their negative and unfamiliar interpretation of the voluntarily childless theme is consistent with Culley *et al.*'s (2004) work who reported that within the South Asian community, parenthood was considered to be mandatory and children were highly valued. Both our results and Culley's demonstrate that for our sub-sample of South Asians, life without children is undesirable as they are the most important thing in their lives. White participants in this study (irrespective of parity), although also bound by some socio-cultural values advocating the virtues of childrearing on the other hand, were generally more likely to explore the idea that there *could* be other

important things in life.

Van Rooij *et al.* (2006) reported that Turkish men and women living in The Netherlands, continued to value culturally specific reasons for parenthood, including (for men) the importance of the continuation of the family name and line. These values, though traditionally also prominent in White Western populations, have become less overtly pressing, in modern societies coincidental with a decline in adherence to traditional religious practices (Bruce, 2001), practices *not* declining in South Asian populations. The ethnic differences of the reasons for parenthood with South Asian participants asserting unequivocally that children were the most important thing in life, and emphasising the continuation of their family name, highlighted by others (van Balen and Inhorn, 2002) on the social importance of children in other ethnically and culturally diverse communities.

### ***5.5.1 Limitations***

There are some limitations to this study. First, generalisations of the findings from this study need to be used with caution, since this study is based on the life experiences of a specific (and small) sample of participants recruited through snowballing. Second, the IPA method has been applied flexibly within this study. For example, the heterogeneity amongst the sample (e.g. inclusion of parous and voluntary childless participants) deviate from the principles of IPA and the IPA requires the phenomena under research examination to be salient to all participants. Whereas, in this study all participants were asked for their reasons for and against parenthood. So, parous participants were asked their reasons *against* parenthood and voluntary childless participants were asked about their reasons *for* parenthood. In addition, the use of the Reasons for Parenthood scale as a topic guide is a deductive approach as opposed to inductive, which is favoured by IPA. This

novel and divergent use of IPA was taken after careful considerations of the overall aims of this thesis. For example, we wanted to utilise the Reasons for Parenthood scale fully, which is why all participants (irrespective of their parity) were asked about their reasons for and against parenthood. Also, by using the Reasons for Parenthood scale as a topic guide, it was possible to validate the scale using qualitative methods under the triangulation model used in this thesis (Blaikie, 1991). It was important to do this as the scale was going to be used extensively throughout this thesis (e.g. studies 2 and 3). There are other research methods available such as grounded theory or thematic analysis which could have been employed. However, IPA was the theory of choice because, as discussed in the introduction chapter, the IPA would be compatible with other research methodologies used in this thesis, most notably the Theory of Planned Behaviour (Smith, 1996; Clare, 2003). In hindsight however, it may have been more appropriate to exclude the sample of voluntary childless participants and analyse them separately. This is certainly an avenue for future work.

### *5.5.2 Reflective commentary*

The familiar ethnic background between South Asian participants and myself undoubtedly facilitated the research interviews, whereby South Asian participants spoke explicitly and comfortably about societal and personal pressures to have genetically related children. I was also able to understand the psychological and cultural significance of South Asian participant's discourses by drawing on my own personal and often related familial experiences. This enriched understanding between the participants and myself may have enabled more detailed narratives to evolve from the interviews. In addition, I also shared a common background with many of the White participants in this study and as I am a British born and English speaking, we shared a common language. There were some life

experiences however that I am unfamiliar with, in particular, that of being White, a mother and spouse. Further, it is possible that I may have imposed my own terms of reference on the interview and data analyses. For example, although I am childless, I hope to become a mother and in many ways I too ascribe to mainstream South Asian traditional values of [mandatory] motherhood. My own feelings and attitudes may have influenced the research process because I may have made some assumptions or interpretations which are naive or incorrect, particularly when I was handling data with voluntary childless participants. However, all interview transcripts were reviewed by the supervisor of this thesis (OvdA,) who is a mother of three children and discussions of the transcripts during supervision aided in reducing researcher bias.

## **5.6 Conclusion**

This study set out to determine how a mixed set of individuals perceived and interpreted parenthood and how their individual, social and cultural context shaped these interpretations and constructs. Consistent with previous research, modern British women and men continued to endorse traditional and romantic attitudes towards parenthood (Oakley, 1980; Pheonix, Woollett and Lloyd, 1991; Letherby, 1994; Ulrich and Weatherall, 2000). However, these traditional attitudes towards parenthood, particularly genetic parenthood, may conflict with the reality of parenthood and family that is created through oocyte donation. In oocyte donation, women are the biologic and social mothers of the child, but not genetic. Findings from this study confirmed the importance of genetic links in attitudes towards parenthood and provide a sound foundation to now investigate the link between parenthood and oocyte donation for treatment (next chapter) and research (chapter 6).

## **5. Study 2 A quantitative study on attitudes and demographic factors influencing women's intention to donate oocytes <sup>5</sup>**

### **5.1 Summary**

The previous study (study 1, chapter 4) qualitatively assessed the meaning of parenthood using the Reasons for Parenthood scale as a topic guide. This study builds on that work and quantitatively examines the link between oocyte donation intentions and parenthood. Specifically, the aims of this study were to assess components of the Theory of Planned Behaviour (TPB) in intentions to donate oocytes and examine the link between oocyte donation intentions and reasons for parenthood using Structural Equation Modelling (SEM). A total of 349 women *under* the age of 35 (35 is the upper age limit that UK clinics accept for oocyte donors); 161 women *over* the age of 35; and 17 former oocyte donors completed the Attitudes towards oocyte donation and Reasons for Parenthood scales online. The results obtained revealed that the demographic profiles and attitudinal responses of women reporting an intention to donate was similar for women under the age of 35 and women older than 35. SEM analyses on women under the age of 35 indicated a significant direct effect of some components of the TPB (attitudes and subjective norms) and endorsement of less conventional reasons for parenthood to intentions to donate. Age, education and attitudes towards the importance of a genetic link between parent and child indirectly influenced the intentions to donate oocytes. Intender's (under 35) less conventional perceptions of parenthood coincided with their positive beliefs about the importance of parenthood and children. Similarly, regression analyses on women over 35 years of age revealed attitudes towards oocyte donation was the only factor that predicted

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<sup>5</sup> Purewal, S., & van den Akker, O. B. A. (2009). Attitudes and Intentions towards Volunteer Oocyte Donation. Reproductive Biomedicine Online. In Press. (Appendix 7).

donation intentions. Former oocyte donors demonstrated positive attitudes towards the removal of anonymity and disclosure of genetic origin to child. Donors also believed having children is the most important thing in life, but undervalued the importance of a genetic link between parent and child. Further, attitudes towards parenthood are an important factor underpinning the motivation for potential oocyte donation.

## 5.2 Introduction

### 5.2.1 *The Theory of Planned Behaviour*

Theory based research examining factors that influence women's intention to donate oocytes is limited (van den Akker, 2006). To the author's knowledge, apart from one other attempt to apply a psychoanalytic model to oocyte donation, the Theory of Planned Behaviour (TPB) developed by Ajzen (1985, 2002) has been the only health psychological model applied to oocyte donation (Skoog-Svanberg, Lampic, Bergh and Lundkvist., 2003; Purewal and van den Akker, 2006). The TPB is an extension of the Theory of Reasoned Action (TRA) (Fishbein and Ajzen, 1975; Ajzen and Fishbein, 1980). According to the TPB model, there are three psychological constructs that predict intention to perform a behaviour: *Attitudes towards the behaviour* (beliefs about the consequences of a behaviour and positive or negative judgements about performing the behaviour), *subjective norms* (perceived social pressure to perform a behaviour and beliefs about how important people would support them) and *perceived behavioural control* (extent to which a person feels they can perform the behaviour and is a construct not included in the TRA). The TRA is a model that predicts voluntary behaviour where the individual has a great deal of behavioural control, whereas, the TPB predicts behaviour which is not entirely under their control (Ajzen and Madden, 1986; Sheeran, Trafimow and Armitage, 2003; Kellar and Abraham, 2005).

Skoog-Svanberg *et al.* (2003) found the TPB successfully *differentiated* between women who were willing, unwilling or unsure to become oocyte donors, whereas, Purewal and van den Akker (2006) found the TPB *predicted* intentions towards oocyte donation. However, Skoog-Svanberg *et al.*'s data was limited to non-parametric analyses and factors predicting or mediating the intention to donate were not measured and Purewal and van den Akker (2006) only recruited a small sample of women. Thus, there is scope for improvement and building on their earlier work.

Theory based research is not just rare in oocyte donation, it is also limited in other donation domains (Bresnahan, Lee, Smith, Shearman, Nebashi, Park, and Yoo, 2007). However, some studies have successfully applied the TPB to organ and tissue donation behaviour (Kent, 2002; Bresnahan *et al.*, 2007; Mayrhofer-Reinhartshuber, Fitzgerald, Benetka and Fitzgerald, 2006), blood donation (Giles and Cairns, 1995; Armitage and Conner, 2001; Giles, McClenahan, Cairns and Mallet, 2004; Lemmens, Abraham, Hockstra, Ruiter, De Kort, Brug, and Schaalma, 2005; Ferguson, France, Abraham, Ditto and Sheeran, 2007; France, France and Himawan, 2008), and donation of money to charity (Smith and McSweeney, 2007). Generally, these studies have found that the TPB is unable to fully account for the particular donation behaviour and other additional variables have an influencing or moderating role, such as, self efficacy, self-identity and moral norms have been found to be important factors in determining blood donation (e.g. Armitage and Conner, 2001; Giles *et al.*, 2004; France *et al.*, 2008). Within the oocyte donation literature, general altruism has not been found to predict intention to donate oocytes (Purewal and van den Akker, 2006), but there is evidence to suggest that attitudes towards parenthood is a key determinant.

### ***5.2.2 Importance of Parenthood***

Previous research has demonstrated that interpretations of parenthood continues to be influenced by romantic and traditional images and that there are cultural expectations to bear your own children, live in biologic family units and for biological and genetic parenthood (e.g. Oakley, 1979; Hoffman and Manis, 1979; Woollett, 1991; van Balen and Trimbos-Kemper, 1995; Smith, 1999; Ulrich and Weatherall, 2000; Letherby, 2002; and chapter 4 - Purewal and van den Akker, 2007). Consequently, families created through third party conception deviate from the cultural norms because women allow other women to raise their genetic children and participate in the creation of an unconventional, non-biologic family. The procedure and symbolic significance of oocyte donation therefore challenges traditional views of parenthood and conception (van den Akker, 2001). In this context, studies have examined oocyte donor's attitudes towards parenthood and motherhood. Some research has found that the perceived importance of children and appreciation of the desire for motherhood underpin women's reasons for donating oocytes (Raoul-Duval, Letur-Konirsch and Frydman, 1992; Weil, Cornet, Sibony, Mandelbaum & Salat-Baroux, 1994; Snowdon, 1994; Kalfoglou and Gittelsohn, 2000; Byrd, Siderbotham and Lieberman, 2002; Kirkman, 2003; Winter and Daniluk, 2004; Yee, Hitkari and Greenblatt, 2007), and oocyte donors often report less traditional sex role beliefs or behaviours (e.g. Schover, Collins, Quigley, Blankstein and Kanoti, 1991; Klock, Stout and Davidson, 1999, 2003).

It is possible therefore that oocyte donors, who have been shown to endorse less traditional sex role beliefs and behaviour (by participating in the creation of an unconventional family), may also have less conventional or normative perceptions of parenthood. The aims of this study were therefore to evaluate components of the Theory of Planned Behaviour



(TPB) in oocyte donation in an attempt to replicate Skoog-Svanberg *et al.*'s (2003) study in the UK and to examine the link between women's intentions to donate and their reasons for parenthood using Structural Equation Modelling (SEM).

### **5.3 Materials and Method**

#### **5.3.1 Design and Measures**

The methodology of this study has been described in detail in chapter 3. However in summary, the English translated version of the Attitudes towards oocyte donation scale (Skoogs-Svanberg *et al.*, 2003) (appendix 3), and the Reasons for Parenthood Scale (Langdridge *et al.*, 2005) (appendix 4) were used to assess attitudes and intentions to donate oocytes and women's reasons for and against parenthood, respectively. The predictive power and effect of a number of socio-demographic variables were also examined.

The translated Attitudes towards oocyte donation questionnaire included 11 subsections and are listed below (the five italicised subsections were used to test the theoretical components of the TPB). 'Attitudes towards importance of children'; 'Attitudes towards the importance of a genetic link between parent and child'; '*Attitudes towards oocyte donation*'; 'Attitudes towards disclosure to offspring'; 'Attitudes towards specific circumstances in the procedure of oocyte donation'; 'Attitudes towards a recruitment advertisement'; '*Intentions to donate*'; '*Attitudes towards the consequences of oocyte donation*'; '*Subjective norms*'; '*Perceived behavioural control*'; and 'Attitudes towards factors that would induce women to donate'.

The Reasons for Parenthood scale included six reasons for parenthood (*fulfilment, to please partner, make family, part of both of us, good home, and biological drive*) and five reasons against (*other things, restrict freedom, partner's wishes, interfere with career, and concern over over-population*). After reviewing the literature, a further four items were included in the reasons for parenthood (*to carry on family name, religious beliefs, genetically part of me and confirm femininity*) and one item was included in reasons against parenthood (*unwanted changes*). Items on the reasons for parenthood scale reflect dominant and normative reasons for wanting to have children (Langdridge, 2008, personal correspondence), so a high score was indicative of supporting normative and conventional reasons for wanting to have children, whereas a low score was indicative of supporting non-normative and less conventional reasons.

### **5.3.2 Participants**

A total of 528 women completed the questionnaires online and were aged between 16 to 68 years. Due to the relatively large number of participants, it was possible to separate the data and report the findings from women aged between 18 to 35 years (only women aged 35 years or less are eligible as oocyte donors in the UK and the single 16 years old respondent's data was also removed) and women aged between 36 and 68 years. Three hundred and forty nine respondents (68.4%) were aged between 18 and 35 years and 161 (31.6%) were aged between 36 to 68 years. Further, 17 respondents were former oocyte donors and their data will be presented separately.

Of the 349 women under 35 years of age, 242 were recruited from websites; 62 from a university; 15 women had completed the questionnaires after finding them through search engines and 30 women were recruited from unknown sources. The mean age of young

participants was 27.8 years (SD=4.7) and the majority were White (89.7%). Of the 161 women over 35 years of age, 127 were recruited from websites; 22 from a university; 9 women had completed the questionnaires after finding them through search engines and 3 women were recruited from unknown sources. Naturally, the women from this group had a higher mean age (42.8 years, SD=6.2), however, the majority were White (96.9%).

### ***5.3.3 Procedure***

This study was carried out during 2006 to 2007. The Questionnaires were developed online and specific websites were targeted which were more likely to attract women visitors than men. A link to the online questionnaire was also attached to the email signatures of the authors, and emails inviting University staff and students were also sent off. A number of respondents had also completed the questionnaire after finding it through Internet search engines. Ethical approval was granted by the local university ethics committee and informed consent was implied by the completion and submission of the questionnaires.

## **5.4 Results**

### ***5.4.1 Intentions to Donate***

Of the 349 young respondents (under 35), 126 (36.1%) were potentially intending to donate in the future ('intenders') as identifiable donors, 122 (35.0%) reported maybe or don't know ('possible intenders') and 101 (28.9%) were unwilling ('non-intenders'). For the older group of participants (over 35), 21 (13%) were intenders, 42 (26.1%) were possible intenders and most were non-intenders ( $n = 98$ , 60.9%). Analyses revealed that women over 35 were significantly less likely to report an intention to donate compared to women under 35 ( $\chi^2 = 51.81$ , d.f. = 2,  $P < 0.001$ ).

### **5.4.2 Participant Characteristics**

#### **5.4.2.1 Women Under 35**

Student Newman-Keuls (SNK) post hoc analyses revealed that intenders (under the age of 35) (mean age 27.9) and possible intenders (mean age 28.4) were significantly older than non-intenders (mean age 26.7) ( $F(2, 348) = 3.88, P < 0.022$ ). There were no differences between intenders, possible intenders or non-intenders on marital status ( $\chi^2 = .48, d.f. = 2, P > 0.05$ ) or socio-economic status ( $\chi^2 = 4.38, d.f. = 2, P > 0.05$ ). Non-intenders were significantly more likely to be nulliparous ( $\chi^2 = 24.31, d.f. = 2, P < 0.001$ ) compared to possible intenders and intenders. Whereas, intenders were significantly more likely to have experienced a miscarriage ( $\chi^2 = 8.67, d.f. = 2, P < 0.013$ ), termination ( $\chi^2 = 10.06, d.f. = 2, P < 0.007$ ), report a fertility problem ( $\chi^2 = 12.76, d.f. = 4, P < 0.01$ ) and were less educated ( $\chi^2 = 24.65, d.f. = 2, P < 0.001$ ) compared to possible intenders and non-intenders.

#### **5.4.2.2 Women Over 35**

SNK post hoc analyses were also conducted with women over the ages of 35 and analyses revealed that unlike women under 35, intenders (mean age 39.3) and possible intenders (mean age 40.2) were significantly younger than non-intenders (mean age 44.6) ( $F(2, 160) = 13.07, P < 0.000$ ). Similar to 'younger' women, there were no differences between intenders, possible intenders or non-intenders on marital status ( $\chi^2 = 3.40, d.f. = 2, P < 0.05$ ). However unlike women under 35, intenders and possible intenders were significantly less likely to describe themselves as holding professional work status compared to non-intenders ( $\chi^2 = 11.97, d.f. = 2, P < 0.003$ ). This group however did not reveal any parity differences ( $\chi^2 = 1.90, d.f. = 2, P > 0.05$ ), miscarriage ( $\chi^2 = 0.81, d.f. = 2, P > 0.05$ ), or differences in reported fertility status ( $\chi^2 = 1.12, d.f. = 4, P > 0.05$ ). However, similar to

'young' women, intenders were significantly more likely to report a past termination ( $\chi^2 = 6.63$ , d.f. = 2,  $P < 0.03$ ) and were less educated ( $\chi^2 = 13.67$ , d.f. = 2,  $P < 0.001$ ) compared to possible intenders and non-intenders.

#### ***5.4.3 Attitudes towards Oocyte Donation***

Results revealed that the data distribution were normal and did not violate the assumptions of multivariate statistics, which permitted the use of ANOVA tests. Table 5.4.1 shows the group means of the Attitude towards oocyte donation questionnaire. As can be seen from the table, responses to the questionnaire from women under and over 35 years were very similar. A two way factorial ANOVA also revealed donor groups for women under 35 and over 35 behaved almost identically on the subsections of the questionnaire. Thus, for easier interpretation of results, only the data from women under the ages of 35 will be described in text. However, table 5.4.1 will report all the results in full for both age groups of women.

Table 5.4.1: Means on the Attitudes towards oocyte donation sub-sections

Oocyte Donation Sub-Sections	Means for Intenders	Means for Possible Intenders	Means for Non-Intenders	P Value
<b>Attitudes towards disclosure to offspring</b>	21.0 (SD = 4.2)	20.6 (SD = 4.8)	22.4 (SD = 5.0)	**
Young Women	21.0 (SD = 5.5)	21.6 (SD = 4.3)	23.9 (SD = 4.8)	**
Old Women				
<b>Attitudes towards factors that would induce women to donate</b>	40.3 (SD = 5.1)	40.5 (SD = 5.9)	35.4 (SD = 7.9)	***
Young Women	41.5 (SD = 4.4)	39.8 (SD = 5.4)	33.3 (SD = 10.4)	***
Old Women				
<b>Attitude towards recruitment</b>				
Young Women	16.2 (SD = 3.7)	11.6 (SD = 4.3)	6.6 (SD = 3.6)	***
Old Women	16.8 (SD = 3.2)	13.5 (SD = 3.6)	7.2 (SD = 4.4)	***
<b>Attitudes towards the importance of children</b>	20.7 (SD = 4.9)	19.5 (SD = 4.2)	18.3 (SD = 4.7)	***
Young Women	19.1 (SD = 6.34)	18.4 (SD = 5.1)	17.4 (SD = 4.3)	NS
Old Women				
<b>Attitudes towards specific circumstances in the procedure of oocyte donation</b>	19.1 (SD = 3.7)	18.6 (SD = 3.5)	16.0 (SD = 3.9)	***
Young Women	19.6 (SD = 2.8)	19.2 (SD = 3.8)	15.6 (SD = 5.5)	***
Old Women				
<b>Attitudes towards the importance of genetic link</b>	11.7 (SD = 3.6)	12.4 (SD = 3.9)	13.8 (SD = 3.6)	***
Young Women	10.3 (SD = 4.6)	11.6 (SD = 4.0)	12.7 (SD = 4.8)	*
Old Women				

\*  $P < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.0001$ ; NS = Non-significant. ANOVAs used to compare means

SNK revealed that for women under the ages of 35, intenders and possible intenders reported significantly more negative 'Attitudes towards disclosure of genetic origin to offspring' ( $F(2,348)=4.39$ ,  $P < 0.01$ ), and were significantly more favourable towards

'Factors that would induce women to donate' ( $F(2,348)=22.36, P<0.0001$ ) compared to non-intenders. Intenders also demonstrated significantly more positive 'Attitudes towards recruitment of oocyte donors' ( $F(2,348)=173.18, P<0.0001$ ) and the 'Importance of children' ( $F(2, 348) = 7.91, P<0.0001$ ) than possible intenders, who were significantly more positive than non-intenders. Whereas, potential and possible intenders were more positive about 'Attitudes towards specific circumstance in the procedure of oocyte donation' ( $F(2,348)=22.35, P<0.0001$ ) and negative towards the 'Importance of a genetic link between parent and child' ( $F(2,348) = 9.19, P<0.0001$ ) compared to non-intenders.

#### ***5.4.3 Factors Predicting Intention to Donate***

Table 5.4.2a and 5.4.2b shows the correlation matrix between components of the TPB, socio-demographic variables, reasons for and against parenthood and intentions to donate. Intentions were significantly correlated with all components of the TPB, attitudes towards the importance of genetic ties, age and education and reasons for and against parenthood.

Table 5.4.2a: Correlation matrix between variables

	Intention	Oocyte	Consequence	Subjective	PBC
<b>Intention</b>					
Young	-				
Old					
<b>Oocyte</b>					
Young	.499**	-			
Old	.474**				
<b>Consequence</b>					
Young	.591**	.470**	-		
Old	.483**	.654**			
<b>Subjective</b>					
Young	.509**	.435**	.495**	-	
Old	.457**	.580**	.596**		
<b>PBC</b>					
Young	.341**	.244**	.253**	.433**	-
Old	.294**	.391**	.394**	.455**	
<b>Genetic</b>					
Young	-.220**	.137**	-.125**	-.186**	-.090*
Old	-.193**	.233**	-.084	-.191**	.217**
<b>Age</b>					
Young	.099*	.085	.035	.053	-.024
Old	.358**	.347**	-.224**	-.189**	.207**
<b>Education</b>					
Young	-.339**	.244**	-.285**	-.287**	.233**
Old	-.268**	-.130	-.133*	-.182*	.037
<b>Reasons For</b>					
Young	-.248*	-.121*	-.097	-.155**	-.268**
Old	-.235**	-.087	-.026	-.119	-.182*
<b>Reasons Against</b>					
Young	-.196**	-.174**	-.162**	-.146**	-.027
Old	-.101	.134	.141	.018	.031

Note: \*  $P < 0.05$ ; \*\*  $P < 0.01$ ; Oocyte = Attitudes towards oocyte donation; Consequences = Attitudes towards consequences; Subjective = Subjective norms; PBC = Perceived Behavioural Control; Genetic = Attitudes towards the importance of a genetic link.



Table 5.4.2b: Correlation matrix between variables

	Genetic	Age	Education	Reasons For	Reasons Against
<b>Intention</b>					
Young	-.220**	.099*	-.339**	-.248*	-.196**
Old	-.193**	.358**	-.268**	-.235**	-.101
<b>Oocyte</b>					
Young	-.137**	.085	.244**	-.174**	-.174**
Old	-.233**	.347**	-.130	.134	.134
<b>Consequence</b>					
Young	-.125**	.035	.285**	-.097	-.162**
Old	-.084	.224**	-.133*	-0.26	.141
<b>Subjective</b>					
Young	-.186**	.053	.287**	-.155**	-.146**
Old	-.191**	.189**	-.182*	-.119	.018
<b>PBC</b>					
Young	-.090*	-.024	.233**	-.268**	-.027
Old	-.217**	.207**	.037	-.182*	.031
<b>Genetic</b>					
Young	-	-.107*	.033	.388**	.039
Old		.104	-.060	.345**	-.019
<b>Age</b>					
Young		-	.143**	-.089	.012
Old			.138*	.050	-.021
<b>Education</b>					
Young			-	.045	.137*
Old				.055	-.003
<b>Reasons For</b>					
Young				-	-.085
Old					-.025
<b>Reasons Against</b>					
Young					-
Old					

Note: \*  $P < 0.05$ ; \*\*  $P < 0.01$ ; Oocyte = Attitudes towards oocyte donation; Consequences = Attitudes towards consequences; Subjective = Subjective norms; PBC = Perceived Behavioural Control; Genetic = Attitudes towards the importance of a genetic link.

A logistic regression model was used to assess the predictive power of socio-demographic characteristics to intentions to donate for women under and over 35 years of age. For younger women, age and education were significant predictors (see table 5.4.3). That is, increasing age and less education predicted intention to donate for women under the ages of 35. Parity, miscarriages, terminations, fertility status, marital status and socio-economic

status were not associated with intention to donate. However, for the older group of women, no socio-demographic variable predicted intention.

Table 5.4.3: Socio-demographic characteristics predicting intention to donate among young women

Variable	Odds Ratio	CI (95%)	P Value
Age <sup>a</sup>	1.13	1.06-1.21	***
Education <sup>b</sup>	.32	.23-.46	***

\*\*\*  $p < 0.0001$ . Regression analyses were conducted with intending and non-intending donor groups; <sup>a</sup>  $B = 0.13$ ,  $df = 1$ ,  $Wald = 12.56$ ; <sup>b</sup>  $B = -1.13$ ,  $df = 1$ ,  $Wald = 38.53$ .

Another logistic regression models were used to assess if components of the TPB predicted intentions to donate oocytes. As can be seen from Table 5.4.4, regression analysis revealed all components of the TPB successfully predicted intentions to donate in young women (under 35 years). Thus, 'Attitude towards oocyte donation', 'Attitude towards the consequences of oocyte donation', 'Subjective norms' and 'Perceived behavioural control' were significantly associated with intentions to donate oocytes. However, for older women, 'Attitudes towards oocyte donation' was the only TPB component that predicted intention.

Table 5.4.4: Components of the Theory of Planned Behaviour predicting intention or non-intention to donate

Variable	Odds Ratio	CI (95%)	P Value
<b>Attitudes towards oocyte donation</b>			
Young Women <sup>a</sup>	1.30	1.12-1.51	**
Old Women <sup>e</sup>	1.45	1.05-2.00	*
<b>Attitudes towards the consequence of oocyte donation</b>			
Young Women <sup>b</sup>	1.43	1.26-1.63	***
Old Women <sup>f</sup>	1.17	.98-1.39	NS
<b>Subjective norms</b>			
Young Women <sup>c</sup>	1.75	1.15-2.64	*
Old Women <sup>g</sup>	1.61	.79-3.28	NS
<b>Perceived behavioural control</b>			
Young Women <sup>d</sup>	1.79	1.20-2.68	*
Old Women <sup>h</sup>	1.53	.79-2.954	NS

\*p <0.01; \*\* p <0.001; \*\*\* p <0.0001; NS = Non-significant. Regression analyses were conducted with intending and non-intending donor groups.

<sup>a</sup> B = 0.26, df = 1, Wald = 11.71; <sup>b</sup> B = 0.36, df = 1, Wald = 29.31; <sup>c</sup> B = 0.56, df = 1, Wald = 6.90; <sup>d</sup> B = 0.58, df = 1, Wald = 8.05.

<sup>e</sup> B = 0.37, df = 1, Wald = 5.05; <sup>f</sup> B = 0.16, df = 1, Wald = 3.17; <sup>g</sup> B = 0.48, df = 1, Wald = 1.75; <sup>h</sup> B = 0.43, df = 1, Wald = 1.61.

#### 5.4.4 Reasons for Parenthood

There were no significant differences between the donor groups among participants under and over 35 years of age in their intention to have a child in the future. However, intenders from the young group were significantly more likely to report low scores on the reasons *for* (F(2, 348) = 10.35; P<0.0001) and *against* parenthood (F(2, 348) = 8.95; p<0.0001) (see figure 5.4.1) compared to possible intenders or non-intenders, thus reflecting less conventional reasons for wanting to have children compared to the other donor groups. Similarly, intenders from the older group scored significantly lower on the reasons *for* parenthood compared to possible intenders and non-intenders (F(2, 160) = 4.62; P<0.01). However, there were no significant group differences in their reasons *against* parenthood (F(2, 159) = 0.83; P>0.05) (see figure 5.4.2).

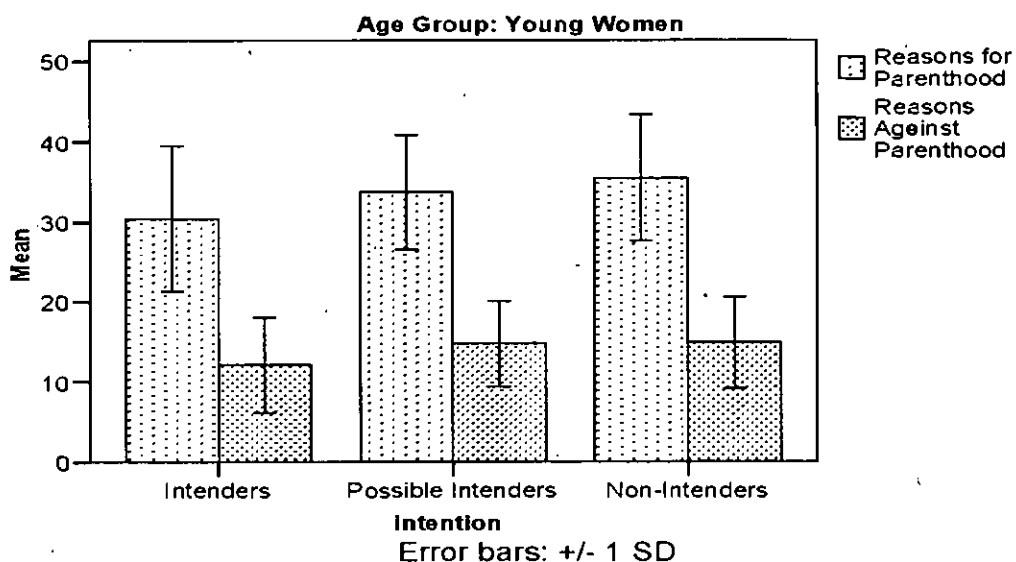


Figure 5.4.1: Mean scores for reasons for and against parenthood for women under 35 years

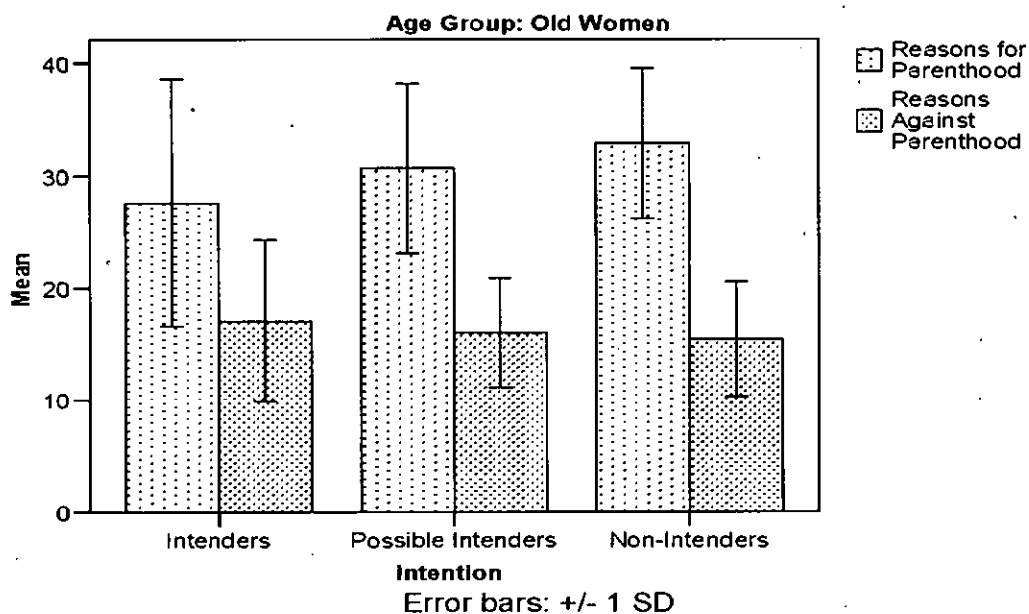


Figure 5.4.2: Mean scores for reasons for and against parenthood for women over 35 years

#### 5.4.5 Structural Equation Modelling Summary

Fig 5.4.3 presents the structural equation model, including specified interactions for women under the age of 35. A SEM analysis was not run for women over 35 years of age because of the sample size (Bryne, 2001). Unlike the regression analyses which found all four components of the TPB predicted intentions, the SEM model only found three components of the TPB; namely positive 'Attitudes towards oocyte donation'; positive

‘Attitudes towards the consequence of oocyte donation’; and ‘Subjective norms’ ( $\beta = .790$ ,  $P < 0.001$ ) directly predicted the intention to donate (‘Perceived behavioural control’ did not feature in the model). According to the model, reasons for parenthood ( $\beta = -.014$ ,  $P < 0.001$ ) was inversely related to intentions, which means endorsing less conventional reasons for parenthood predicted intentions to donate. Age, education and ‘Attitudes towards the importance of a genetic link between parent and child’ interacted with other variables and had an indirect effect on intentions. Specifically, age directly influenced TPB components ( $\beta = .025$ ,  $P < 0.007$ ) and inversely influenced ‘Attitudes towards the importance of a genetic link’ ( $\beta = -.086$ ,  $P < 0.05$ ), whereas education inversely interacted with TPB components ( $\beta = -3.20$ ,  $P < 0.001$ ) and no other variables. ‘Attitudes towards a genetic link’ had a direct influence on reasons for parenthood ( $\beta = .954$ ,  $P < 0.001$ ). The model accounts for 63% of the variance in the intention to donate. The overall fit of the model was good, with  $\chi^2 = 22.92$  (d.f. = 18,  $P = .19$ ) and fit indices of 0.984 for GFI, 0.991 for CFI, 0.961 for NFI, 0.028 for RMSEA, 58.923 for AIC and 146.314 for CAIC. No direct interaction between reasons for parenthood and TPB components were identified.

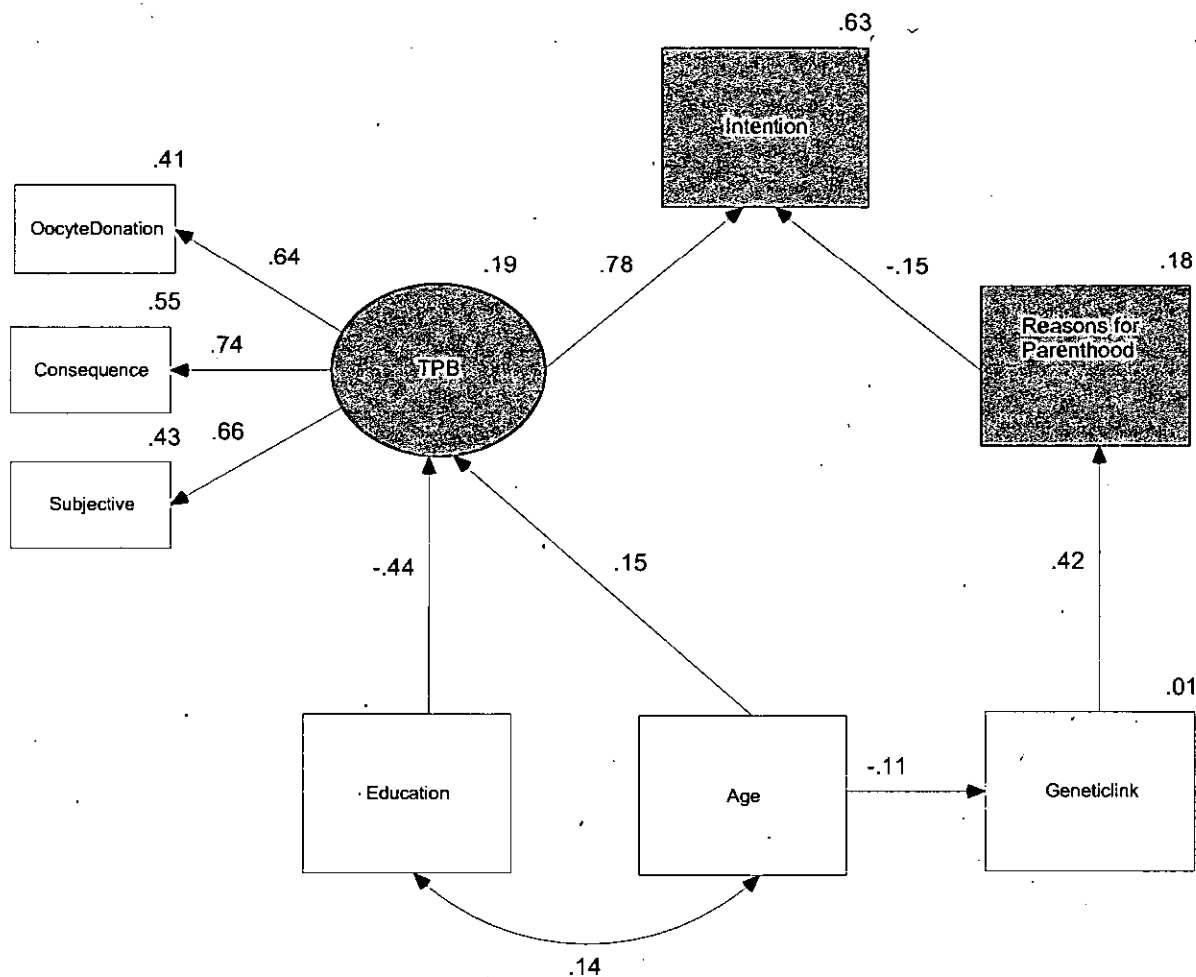


Figure 5.4.3: Structural Model for Intention towards Oocyte Donation.

**Note:** Circles represent latent variables and squares represent observed variables. Values are standardised coefficients; all coefficients are significant at  $p < 0.05$ . TPB represents Theory Of Planned Behaviour components; Subjective represents Subjective Norms; OocyteDonation represents Attitudes towards Oocyte Donation in General; Consequences represent Attitudes towards the Perceived Consequences of Oocyte Donation; Reasons for Parenthood represent the Reasons for Parenthood subscale; Geneticlink represents Attitude towards the Importance of Genetic Link.

#### 5.4.6 Former Oocyte Donors

The mean age of former oocyte donors was 32.5 years (SD = 6.1, range 25 to 46). Fifteen oocyte donors were White and two were of South Asian origin. Ten donors had at least one child and five of the donors had experienced a past termination and five had experienced a miscarriage. The majority of donors were in a long term relationship (12) and six of the 17 donors had obtained higher education. Three donors reported having a fertility problem and six reported their partner had a fertility problem. Nine donors reported they would

consider donating their oocytes again, 3 were unsure and five were unwilling. Four of the five women who were unwilling were older than 35 years old; therefore they would be unable to donate again in the future.

As there were only 17 former oocyte donors, no statistical analyses were performed because of the lack of clinical and research meaningfulness. However, general trends are reported, which gives reliable information on the attitudinal reporting of former donors. For example, most donors reported they would be glad their biological child might try to seek them out after 18 years ( $n = 9$ ); believed as an adult the donor child should be able to find out the identity of the oocyte donor ( $n = 12$ ); believed the parent should be honest to the child regarding their genetic origin ( $n = 12$ ); and reported they were neutral or happy about their genes being passed on ( $n = 14$ ). The majority reported being happy about helping a childless couple ( $n = 16$ ) and they felt they had made a contribution to mankind through their donation ( $n = 13$ ). Most donors scored high on subjective norms ( $n = 16$ ) and perceived behavioural control ( $n = 16$ ). However, 14 donors reported they would brood about donating their oocytes for the rest of their life. Donors had positive attitudes towards the importance of children and reported having children was the most important thing in life ( $n = 13$ ). However, they were also more likely to report negative attitudes towards the importance of a genetic link between parent and child. For example, only five donors believed a genetic link between mother and child was important.

## 5.5 Discussion

### 5.5.1 Characteristic Profile

The study identified a number of characteristics of potential oocyte donors. Women intending to donate their oocytes tended to be older, had a termination or miscarriage in the past and had less education compared to other women of childbearing ages. The structural equation model revealed that age and lower education contributed to the intention to donate through directly influencing other important variables in the model, namely components of the TPB and attitudes towards a genetic link. Similarly, the demographic profile of women over the age of 35 who also report an intention to donate (although they would not be eligible as oocyte donors because of their advanced age) was similar to women under the age of 35. These women were also more likely to report a past termination, less education and lower socio-economic status than women who do not report an intention or were unsure. However, one notable difference between older and younger participants was there was a significantly lower percentage of older women reporting an intention to donate compared to women under the age of 35. These results could reflect the fact that these women are over 35 years of age and therefore could not donate even if they wanted to. However, it may also be that for older women, oocyte donation (and perhaps other artificial reproductive technologies) is more stigmatised than for younger women. The typical demographic profile of the small sample of former oocyte donors were White women in a stable relationship, often with children and had experienced either a miscarriage or termination, confirming previous reports (Power *et al.*, 1990; Schover *et al.*, 1991; Kirkland *et al.*, 1992; Sauer and Paulson, 1992; Rosenberg and Epstein, 1995; Söderström-Anttila, 1995; Khamisi *et al.*, 1997; Kan *et al.*, 1998; Klock *et al.*, 1999, 2003; Beatens *et al.*, 2000; Kalfoglou and Gittelsohn, 2000; Kalfoglou and



Geller, 2000a; Patrick *et al.*, 2001; Garrido *et al.*, 2002; Byrd, Sidebotham and Lieberman, 2003; Jordan, Belar and Williams, 2004; Winter and Daniluk, 2004; Yee, Hitkari and Greenblatt, 2007).

### ***5.5.2 Removal of Donor Anonymity***

Skoog-Svanberg *et al.* (2003) reported 17% ( $n=120$ ) of their Swedish sample would consider donating. More recently, Brett, Sacranie, Thomas and Rajkhowa (2008) found that 43% ( $n=18$ ) of a small sample of UK women under the age of 35 would consider donating their oocytes as identifiable donors, whereas, we found 30% ( $n=126$ ) of respondents who participated in this study were willing to donate. Thus, despite changes in legislation leading to fears that the removal of donor anonymity in 2005 would further jeopardise oocyte donor recruitment attempts (e.g. Craft *et al.*, 2005; Pennings, 2005), a significant minority of women would continue to consider donating their oocytes as identifiable donors. This is reassuring because of reports of a general shortage of oocyte donors across Europe including the UK (HFEA, 1998; Murray and Golombok, 2000; Blyth and Frith, 2008). Nevertheless, although encouraging, it is unlikely that 30% of the population sampled will actually proceed to donate their oocytes. The TPB (Sheeran, 2002) and donation literature (Radecki and Jaccard, 1999) on intention-behaviour relationships suggests that an intention reported by participants under research conditions does not often translate into actual behaviour. However, it is important to note that our former oocyte donors studied here also revealed positive attitudes towards the removal of anonymity and disclosure of genetic origin to the donor child and Fusillo and Shear (2007) found 89% of their donors would donate even if they were no longer anonymous.

### 5.5.3 Theory of Planned Behaviour

Since hardly any theoretical framework has been applied to explain gamete donation behaviour (van den Akker, 2006), this study set out to apply and test the utility of components of the Theory of Planned Behaviour (TPB) in relation to oocyte donation using SEM. The majority of hypotheses derived from the TPB were supported in the SEM analyses for young women who are in a position to donate their oocytes, confirming previous work in oocyte donation (Skoog-Svanberg *et al.*, 2003; Purewal and van den Akker, 2006) and surrogacy (Poote and van den Akker, 2008). However, regression analyses revealed that components of the TPB were not as effective in predicting intentions to donate among 'older' women (over 35). It is unclear to why components of the TPB were not as proficient in predicting donor groups for older women. However, as the number of intending women was significantly smaller in the older donor group, this may have resulted in the poorer predictive results. Further, SEM analyses on women under 35 years of age found perceived behavioural control did not predict intentions towards oocyte donation, suggesting that it is possible that the Theory of Reasoned Action (TRA) may be sufficient in explaining oocyte donation behaviour in young women.

Ajzen (1985; 2002) included the perceived behavioural control construct in the TPB because there are some behaviours which are unlikely to be under the control of the individual. (Sheeran, Trafimow, Finlay and Norman, 2002). Whereas, within the TRA model, it is a prerequisite that the behaviour under investigation is under the 'control' of the individual (Fishbein and Ajzen, 1975; Ajzen and Fishbein, 1980; Sheeran *et al.*, 2003). The majority of the sample consisted of White females (nearly 90%) and Purewal & van den Akker (2006) found that White women were significantly more likely to report greater perceived behavioural control in making the decision to donate their oocytes than women

from other ethnic groups. So for White women, the decision to become an oocyte donor does not hinge on their perceived behavioural control (as they already have high levels of reproductive control) and their attitudes and subjective norms account for more variance in the decision to donate oocytes, which could potentially support the adoption of the TRA. This is consistent with some previous works on donation behaviour which have adopted the TRA or found the TRA to be more appropriate than TPB in accounting for behavioural intentions. For example, one investigation found perceived behavioural control predicted intentions to become an organ donor among Asian but not American participants (Bresnahan *et al.*, 2007). Bresnahan *et al.* suggested the TRA provided a better explanation of behavioural intention for American participants, whereas the TPB was more appropriate for Asian populations and the same may also be true for oocyte donation. Whereas, Bagozzi, Lee and van Loo (2001) and Breitkopf (2006) justified the decision to apply the TRA instead of the TPB to explain intentions to donate bone marrow because they believed the 'decision to donate is under volitional control' (Bagozzi *et al.*, 2001, pp 31). However, there are plenty of studies in the donation literature that have favoured the TPB model (c.g. Giles and Cairns, 1995; Armitage and Conner, 2001; Giles *et al.*, 2004; Smith and McSweeney, 2007) and the regression analyses in this study did find the perceived behavioural control component predicted oocyte donation intentions. Application of theoretical models in oocyte donation research is in its infancy and clearly more research is needed to clarify these inconsistencies.

However, a major limitation of the TPB is the exclusion of emotion in the model to explain behaviour, particularly in relation to a potentially emotion invoking behaviour such as oocyte donation. This may also explain why, in this study, components of the TPB and socio-demographic variables alone were not able to adequately explain why young women

do or do not donate. As was shown here, another important factor that needs to be taken into account is women's feelings and beliefs towards parenthood.

#### ***5.5.4 Parenthood and Oocyte Donation***

Previous research has found altruistic (Power *et al.*, 1990; Schover *et al.*, 1991; Söderström-Anttila, 1995; Fielding, Handley, Duqueno, Weaver and Lui, 1998; Klock *et al.*, 2003; Beatens, Devroey, Camus, van Steirteghen and Ponjaert-Kristofferse, 2000; Byrd *et al.*, 2003; Winter and Daniluk, 2004; Yee *et al.*, 2007) or financial (Sauer and Paulson, 1992; Kalfoglou and Gittelsohn, 2000; Patrick, Smith, Meyer and Bashford, 2001) reasons for donating oocytes and critically other important factors underpinning the motivation to donate have largely been ignored. According to the structural model utilised in this study, a relationship between less conventional reasons for parenthood and intentions to donate was found. The items on the Reasons for Parenthood scale (Langdrige *et al.*, 2003) reflect dominant and normative reasons for wanting to have a child, so a low score on the scale indicates less conventional reasons for parenthood. Young intenders (under 35) scored lower than possible intenders and non-intenders, but there were no differences between the groups relating to their intention to have a child in the future. Further, young intenders reported significantly more positive and stronger attitudes towards the importance of parenthood and children yet at the same time they did not believe in the importance of a genetic connection between a parent and child. Indeed, our small sample of former oocyte donors also revealed similar results on the questionnaire. A plausible explanation of these apparently contradictory findings is that intenders and possibly oocyte donors may have less conventional reasons for wanting to have children; they are participating in the creation of an unconventional family; they do not wish to care for the offspring; and attach little value to a genetic tie with the child. Cumulatively therefore, an important factor in a

potential oocyte donor's characteristic profile is their less conventional and non-normative perceptions of parenthood, which coincides with and, not conflicts, with their strong beliefs about the importance of parenthood and children. It may be for this very reason why oocyte donation, as Kirkman (2003) and Winter and Daniluk (2004) found, is compatible with oocyte donors notion of motherhood; it is because their notion of parenthood is not restricted to the traditional ideology about the family which is still prevalent in modern society (e.g. van den Akker, 2001; chapter 4 - Purewal and van den Akker, 2007; Lesnik-Oberstein, 2008) and not reliant on genetic relatedness. These findings also support a recent study that used the same Reasons for Parenthood instrument and found that women from the general population reporting willingness to become a surrogate mother (another unconventional method of achieving motherhood) were more likely to report lower scores on the reasons for parenthood scale than women reporting unwillingness (Poote and van den Akker, 2008).

#### ***5.5.4 Limitations***

There are some limitations to this study which must be acknowledged, particularly relating to the outcome measurements used. This study (and thesis) does not evaluate the TPB model. Instead, only some components of the TPB have been measured and the conceptualisations of these components deviate from the original TPB model (see Ajzen, 2002). First, items on the Attitudes towards oocyte donation questionnaire do not adhere to Ajzen's (2002) principles of Target, Action, Context, and Time (TACT), compatibility and specificity and generality. Second, items on the two subscales which measure the 'attitudes' tenet of the TPB (that is, 'attitudes towards oocyte donation' and the 'consequence of oocyte donation') includes some items which do explicitly and directly refer to oocyte donation. For example, one of the items on the 'attitudes towards oocyte

donation' subscale asks "If you can't have children of your own, you should not have any". It must be noted however that the Cronbach alpha's for both subscales were good (.81 for 'attitudes towards oocyte donation' and .70 for 'attitudes towards the consequence of oocyte donation'). Third, 'subjective norms' under Skoog-Svanberg *et al.*'s (2003) working model of the TPB has been conceptualised as 'social support' as opposed to 'social pressure'. Fourth, according to Ajzen (2002), any perceived behavioural control measurements should 'capture people's confidence that they are capable of performing the behaviour' (pp. 2). However, as participants were not fully informed about the oocyte donation procedure, it is possible that the 'perceived behavioural control' item developed by Skoog-Svanberg *et al.* may not be sophisticated enough to capture this complex construct. Finally, the Attitudes towards oocyte donation questionnaire only included single item measurements for 'subjective norms', 'perceived behavioural control' and 'intentions' components of the TPB. Although, there are a number of shortcomings relating to the TPB, as mentioned in the discussion section above, many of the findings obtained in this study have confirmed previous research within the donation and TPB literature. This suggests that despite the problems associated with the outcome measurements, the results may be interpreted with a certain degree of confidence. However, all of these issues will be further discussed in the discussion chapter (9).

Further, the Reasons for Parenthood scale has been used in this study (and thesis) to measure conventional attitudes towards parenthood. According to the author of the scale (Langdridge, 2008, personal correspondence), items on the Reasons for Parenthood scale reflected conventional reasons for wanting to have children, so a high score was indicative of supporting normative and conventional reasons for wanting to have children. In addition, study 1 also found some evidence to support Langdridge's claims. However, it must be acknowledged that no validity assessment (except face validity) was taken to

ensure that the Reasons for Parenthood did in fact measure conventional attitudes towards parenthood. This too will be discussed in chapter 9.

There are also some concerns relating to the representativeness of the sample used and this will be discussed in more detail in the discussion chapter, as it refers to the whole thesis. Although the sample in this study was taken from the general population, the sample does not represent the general population and any generalisation of the findings must be made with some caution.

## **5.6 Conclusion**

Factors influencing women's decision to donate their oocytes are complex and multifaceted. SEM analyses revealed some components of the TPB were supported. However, this theoretical model is only useful in relation to other important factors such as demographics and perceptions of parenthood. It is possible that potential oocyte donors may have less conventional reasons for wanting to have children and that by participating in the oocyte donation process; some unconventional parenthood desires may be fulfilled. In depth qualitative research could delineate these issues and could explain these contradictions and paradoxes more fully and study 4 (chapter 7) has set out to do this. However, the next chapter used the same quantitative approach to examine attitudes towards oocyte donation for research and continued to investigate the link between donation for research and attitudes towards parenthood.

## **6. Study 3 Attitudes and Intentions to Donate Oocytes for Research<sup>6</sup>**

### **6.1 Summary**

Traditionally, oocyte donation referred to the transfer of oocytes from a donor to a host mother and study 2 (chapter 5) focused on attitudes towards oocyte donation for treatment. However, in 2007, the HFEA issued new legislation that allowed women to donate their oocytes for research purposes as altruistic donors or oocyte share donors. The aims of this study were to investigate women's attitudes and intentions to donate using components of the Theory of Planned Behaviour (TPB) and their attitudes towards parenthood through structural equation modelling (SEM). A total of 253 women completed the questionnaires online. Of the 253 respondents, 94 were intenders, 98 were possible intenders and 61 were non-intenders. The majority of intenders (68%) reported no preference towards donating their oocytes towards research or an infertile couple. SEM revealed that age ( $\beta = -.03$ ) and attitudes and subjective norms components of the TPB ( $\beta = .16$ ) had a statistically significant direct effect on intentions to donate for research. Attitudes towards parenthood and the perceived behavioural control component of the TPB were not linked to intentions to donate for research. There appears to be a strong altruistic motive along with the theoretical underpinning of positive attitudes, feeling supported and accepting the consequences of oocyte donation for research, suggesting these have the potential to inform recruitment practices and tailor clinical services.

### **6.2 Introduction**

In 2007, the HFEA issued new legislation that allowed women to donate their oocytes for research. Until recently, most embryo research projects that have been licensed by the

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<sup>6</sup> Purewal, S., & van den Akker, O.B.A. (2009). 'Attitudes and Intentions to Donate Oocytes for Research'. Fertility and Sterility. In Press (appendix 7).



HFEA, obtain their oocytes from either those leftover after patients have undergone IVF; those that are not suitable for treatment (e.g. oocytes that failed to fertilise); or from couples who no longer require their oocytes. However, medical researchers argue that they need good quality oocytes for therapeutic and research purposes, so they successfully proposed using the same method that fertility clinics use to obtain oocytes for fertility treatment; specifically to recruit non-patient donors; or patient donors through oocyte sharing programmes whereby they donate for research in order to obtain subsidised infertility treatment (HFEA, 2007). Procedurally, there is little difference between oocyte donation for research or fertility treatment (Magnus and Cho, 2005). However, the objectives and the personal, social and moral ramifications of these two donation domains are clearly disparate.

### ***6.2.1 Embryo Donation for Research***

It is unclear how women will behave towards the option of oocyte donation for research and what factors would underpin their decision to donate. The majority of studies in the research literature have targeted clinical groups and focused on embryo donation for research and not specifically oocyte donation but there are distinctive differences between people's perceptions of embryos and oocytes (Soderstrom-Anttila, Foudila, Ripatti and Siegborg, 2001; Roberts and Throsby, 2008). For example, embryo donation studies have reported mixed findings on the number of patients willing to donate their embryos for research, ranging from 10% (McMahon, Gibson, Leslie, Saunders, Porter and Tennant, 2003) to 30% (Burton and Sanders, 2004) and 54% (Choudhary, Haimcs, Herbert, Stojkovic and Murdock, 2004). Bjuresten and Hovatta (2003) reported the highest number of patients (92%) agreeing to donate their embryos for research, however these were embryos that could not be used in their infertility treatment and would have otherwise been

discarded, which may explain the high figures. Studies have also reported that patients were significantly more likely to agree to donate their embryos to research than to fertility treatment for other couples (McMahon *et al.*, 2003; Burton and Sanders, 2004; Bangsbøll, Pinborg, Yding-Andersen and Nyboe-Andersen, 2004; Newton, Fisher, Feyles, Tekpetey, Hughes and Isacson, 2007). Further, McMahon *et al.* (2003) measured patient's attitudes and concerns towards donation of their embryos for medical research. They found that 80% of respondents viewed their embryo as potential children, which was higher than the 30% reported by Laruelle and Englert (1995).

#### ***6.2.2 Oocyte Donation for Fertility Treatment, TPB and Parenthood***

Although there are likely to be differences between attitudes towards donating oocytes for research and fertility treatment, it is possible there are commonalities. For instance, past research has shown that components of the Theory of Planned Behaviour (TPB) (Ajzen, 1985, 2002) were successful at differentiating (Skoog-Svanberg *et al.*, 2003) and predicting (Purewal and van den Akker, 2006) women who were willing versus those who were unwilling to donate towards fertility treatment. According to the TPB model, attitudes; subjective norms and perceived behavioural control predict intentions to perform a behaviour (see chapter 1 section 1.2.6.1 for more information on the TPB). So, past studies (Skoog-Svanberg *et al.*, 2003; Purewal and van den Akker, 2006) have found that women with positive attitudes towards oocyte donation and positive assessments of the consequences of donation (attitudes); social support in donating oocytes (subjective norms); and high levels of behavioural control in ability to donate (perceived behavioural control) reported intentions to donate their oocytes. Study 2 (chapter 5) also examined the predictive utility of some components of the TPB in oocyte donation for treatment using SEM. Further, as mentioned before in the literature review (chapter 1) and systematic

review (chapter 2), other studies have found altruism (e.g. Power *et al.*, 1990; Schover *et al.*, 1992; Söderström-Anttila, 1995; Ahuja, Mostyn and Simons, 1997; Ahuja *et al.*, 1998; Fielding *et al.*, 1998; Beatens *et al.*, 2000; Byrd, Siderbotham and Lieberman, 2002), financial incentives (e.g. Sauer and Paulson, 1992; Kalfoglou and Gittelsohn, 2000; Patrick, Smith, Meyer and Bashford, 2001), or making up for a loss, such as a past abortion or rape (e.g. Kalfoglou and Gittelsohn, 2000; Jordan, Belar and Williams, 2004) influenced the decision to donate. Research has also demonstrated that the perceived importance of parenthood is a key factor in determining intentions to donate for treatment (e.g. Snowdon, 1994; Weil, Cornet, Sibony, Mandelbaum and Salat-Baroux, 1994; Byrd, Siderbotham and Lieberman, 2002; Kirkman, 2003; Winter and Daniluk, 2004; Yee, Hitkari and Greenblatt, 2007). This argument is further strengthened by de Lacey's (2005) findings that the role of parenthood is pivotal in embryo donation for treatment and for some patients, embryo donation was likened to child relinquishment.

### **6.2.3 Patient Donors or Non Patients Donors**

The European Society for Human Reproduction (ESHRE) Task Force on Ethics and Law (2007) asserts that oocyte donors for research are no different from other research participants in clinical trials, although they hold them in a 'special category' (Mertes and Pennings, 2006) or as 'research donors' (Magnus and Cho, 2005). There has also been opposition towards the HFEA's ruling to allow oocyte donation for research (e.g. Hands Off Our Ovaries campaign, HOOO, 2006). Particular concern has been voiced against the possible exploitation and coercion of vulnerable women entering an oocyte sharing contract and the inappropriate use of financial incentives (a concern also voiced in donating for treatment). One possible method of averting conflicts of interests and exploitation is to recruit more non-patient donors (Svendsen and Kock, 2008). Women,

who donate as non-patients for altruistic reasons without financial encouragement, would be more comparable to typical research participants in comparison to egg sharing donors. However, to date little is known about the factors that would influence women's decision to donate their oocytes for research. Since, the majority of studies have targeted clinical groups and focused on embryo donation for research and not specifically oocyte donation, this study is timely. The aims were therefore to investigate women's attitudes towards oocyte donation for research and their intentions to donate in a general population sample. Components of the Theory of Planned Behaviour and the link between parenthood and intentions to donate were examined using SEM.

## **6.3 Materials and Method**

### **6.3.1 Design and Measures**

A questionnaire design was used. The translated version of the Attitudes towards Oocyte donation scale (Skoog-Svanberg *et al.*, 2003a; Purewal and van den Akker, 2006) was modified and adapted to assess women's attitudes and intentions to donate oocytes for research (see appendix 5). The modified Attitudes towards oocyte donation for research scale measured the exact same TPB components as the oocyte donation for treatment study reported in chapter 5. Specifically, 'Attitudes towards oocyte donation for research'; 'Attitudes towards the consequence of oocyte donation for research'; 'Subjective norms'; and 'Perceived behavioural control'. The Reasons for Parenthood Scale (Langdridge *et al.*, 2005) (appendix 4) was also administered to assess the link between intentions to donate oocytes and women's attitudes towards parenthood. The predictive power of a number of socio-demographic variables were also examined (e.g. age, ethnicity, marital status, religion, socio-economic status, education level, parity, fertility status and partner's fertility status).

### **6.3.2 Participants**

A total of 253 women completed the questionnaires online; 135 were recruited from websites; 74 from a local university; 37 had completed the questionnaires after finding them through search engines and 7 were recruited from unknown sources. The mean age of the participants was 29.9 years (SD=8.8, range 16-57), the majority were White (94.1%) and 154 (67%) reported being in a long term relationship. Of the 253 respondents, nine had donated their oocytes to treatment and one had donated towards research. A total of 103 (40.7%) had at least one child, 55 (21.7%) of the respondents had miscarried and 35 (13.8%) women had terminated a pregnancy in the past. Moreover, 24 (9.5%) respondents reported they had a fertility problem and 12 (4.7%) reported their partner had a fertility problem.

### **6.3.3 Procedure**

This study was carried out during 2007. The Questionnaires were developed online and specific websites were targeted that women with an interest in reproductive health would visit. University staff and students were recruited through an email request inviting them to take part in this study and a link to the online questionnaires was also attached to the email signatures of the authors (Satvinder Purewal and Professor van den Akker). A number of respondents had also completed the questionnaire after finding it through Internet search engines. Ethical approval was granted by the local university ethics committee and informed consent was implied by the completion and submission of the questionnaires.

#### **6.3.4 Data Analyses**

The data analysis performed has been described in chapter 3 and is similar to the analyses done in study 2 (chapter 5). Further, the data were normally distributed and did not violate the assumptions of multivariate statistics. However, the sample for this study was much smaller than the sample for study 2 and only 22.5% (N = 57) of the sample was aged over the age of 35 (35 is the upper age limit that UK clinics will accept for oocyte donors). Further, additional independent t-test data analyses on women aged under 35 and women over 35 revealed responses were almost identical ('Attitudes towards oocyte donation' was the only subsection where scores were significantly different and older women were more positive than younger). Therefore, due to the small numbers and similarity in responses in both questionnaires, the data was not split into groups of younger and older women, but instead the data analyses were done for the entire sample.

### **6.4 Results**

#### **6.4.1 Intentions to Donate**

Out of the 253 respondents, 94 reported they would be willing to donate in the future ('intenders'), 98 reported maybe or don't know ('possible intenders') and 61 reported they would be unwilling ('non-intenders').

#### **6.4.2 Participant Characteristics**

Intenders were significantly younger compared to possible intenders or non-intenders ( $F(2, 252) = 19.23, P < 0.0001$ ). There were no significant differences between intenders, possible intenders or non-intenders on marital status ( $\chi^2 = 5.27, d.f. = 2, P > 0.05$ ), parity ( $\chi^2 = 0.42, d.f. = 2, P > 0.05$ ), number of miscarriages ( $\chi^2 = 4.69, d.f. = 2, P > 0.05$ ) and number

of terminations ( $\chi^2 = 0.67$ , d.f. = 2,  $P > 0.05$ ). However, intenders were significantly less likely to report a higher education ( $\chi^2 = 10.11$ , d.f. = 2,  $P < 0.006$ ) and were significantly more likely to report lower socio-economic status ( $\chi^2 = 17.14$ , d.f. = 2,  $P < 0.0001$ ) compared to the other donor groups. There were no differences between donor groups regarding respondent's fertility status ( $\chi^2 = 4.91$ , d.f. = 2,  $P > 0.05$ ) and their partner's fertility status ( $\chi^2 = 2.21$ , d.f. = 2,  $P > 0.05$ ). See Table 6.4.1 for demographic characteristic of intenders, possible intenders and non-intenders.

#### ***6.4.3 Donation Preference and Perceptions of Oocytes***

The majority of intenders (68%) reported no preference towards donating their oocytes towards research or an infertile couple. Possible intenders reported no preference (42%), or would rather donate to an infertile couple (37%). Whereas, non-intenders (if they had to choose) were more inclined towards donating their oocytes towards an infertile couple (41%), with 31% still rating 'neither' as their preferred choice. Intenders were probed on the type of research they would consider donating their oocytes towards and 70% reported they would donate to find a cure for illnesses and diseases, 72% would agree to donate to research trying to improve fertility treatment and 68% reported that they would donate to make a difference.

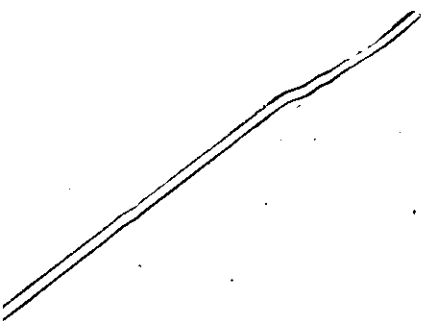
Table 6.4.1: Demographic Characteristics of intenders, possible intenders and non-intenders

Variable	Intenders	Possible Intenders	Non-Intenders	P-Value
Mean Age	26.7 (SD = 6.7)	29.7 (SD = 7.5)	35.1 (SD = 11.1)	***
Marital Status (% with partner)	58%	68%	75%	NS
Parity (% with at least one child)	38%	43%	41%	NS
Miscarriages (% with at least one past miscarriage)	16%	29%	20%	NS
Terminations (% with at least one past termination)	16%	13%	12%	NS
Socio-Economic Status (% with professional status)	29%	44%	62%	***
Qualification (% with higher education)	46%	49%	71%	*
Fertility Status (% with fertility problem)	4%	13%	12%	NS
Partner's Fertility Status (% with partner's fertility problem)	3%	4%	8%	NS

\*p <0.05; \*\* p <0.001; \*\*\*p <0.0001. ANOVA was performed to compare differences in age between groups and chi-square tests were performed to compare all other socio-demographic data between groups.

In addition, the majority of participants (45%) did not perceive an oocyte to be a potential life form, 28% were neutral, whereas, 27% did and there were no significant differences between intenders and non-intenders ( $Z = -1.39$ ;  $P > 0.05$ ) and possible intenders ( $Z = -.27$ ;  $P > 0.05$ ) in their perception of oocytes.





#### **6.4.4 Attitudes towards Oocyte Donation for Research and Reasons for Parenthood**

Table 6.4.2 shows the group means and standard deviations on the questionnaire subscales. Intenders followed by possible intenders had significantly more positive attitudes towards many aspects relating to oocyte donation than non-intenders. For example, post hoc analyses using Student Newman Keuls (SNK) revealed intenders and possible intenders scored significantly higher on 'Attitudes towards oocyte donation for research' ( $F(2,252)=5.17$ ,  $P<0.006$ ), Intenders and possible intenders also scored significantly higher on 'Attitudes towards the consequence of oocyte donation' ( $F(2,252)=18.29$ ,  $P<0.0001$ ) compared to non intenders. Intenders scored significantly higher on 'Attitudes towards recruitment of oocyte donors' compared to possible intenders, who in turn scored higher than non-intenders ( $F(2,252)=32.48$ ,  $P<0.0001$ ). Lastly, intenders and possible intenders reported significantly more positive 'Attitudes towards various factors that would induce women to donate' ( $F(2,252)=5.89$ ,  $P<0.003$ ) compared to non-intenders. However, there were no significant differences between donor groups on 'Attitudes towards importance of children' ( $F(2,252)=2.20$ ,  $P>0.05$ ), 'Attitudes towards importance of a genetic link' ( $F(2,252)=2.20$ ,  $P>0.05$ ) and 'Attitudes towards specific circumstances in the procedure of oocyte donation' ( $F(2,252)=0.36$ ,  $P>0.05$ ) subscales. There were no significant differences between the donor groups relating to their reasons *for* ( $F(2, 252) = 2.07$ ;  $P>0.05$ ) and *against* parenthood ( $F(2, 252) = 2.31$ ;  $p>0.05$ ).

Table 6.4.2: Means and SD's on the Attitude towards oocyte donation for research and Reasons for Parenthood sub-sections

Oocyte Donation Sub-Sections	Means for Intenders	Means for Possible Intenders	Means for Non- Intenders	P Value
Attitudes towards oocyte donation for research	33.7 (SD=4.9)	32.8 (SD=5.9)	30.8 (SD=6.1)	**
Attitudes towards the perceived consequences of oocyte donation	25 (SD=3.2)	24.3 (SD=3.3)	21.7 (SD=3.9)	***
Attitude towards recruitment	16.1 (SD=3.8)	13.2 (SD=4.6)	10.3 (SD=4.9)	***
Attitudes towards specific circumstances in the procedure of oocyte donation	27.9 (SD=5.3)	28.4 (SD=4.3)	28.4 (SD=4)	NS
Attitudes towards factors that would induce women to donate	43 (SD=5.9)	43.6 (SD=5.2)	40 (SD=9)	**
Attitudes towards the importance of children	18.9 (SD=4.8)	20.1 (SD=4.5)	18.7 (SD=4.6)	NS
Attitudes towards the importance of genetic link	12 (SD=3.6)	13 (SD=3.6)	12.2 (SD=3.7)	NS
Reasons for Parenthood	30 (SD=10.3)	32.9 (SD=10.2)	31.9 (SD=9.7)	NS
Reasons against Parenthood	13 (SD=6.8)	11.3 (SD=5.9)	13.2 (SD=6.4)	NS

\*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.0001$ . ANOVAs were performed to compare group differences.

#### 6.4.5 Factors Predicting Intentions to Donate

Table 6.4.3 shows the correlation matrix between age, components of the Theory of Planned Behaviour and intentions to donate. As can be seen from the table, intentions were significantly correlated to age and all four components of the TPB.

Table 6.4.3: Correlation Matrix between variables

	Intentions	Age	Oocyte	Consequence	Subjective	PBC
Intentions	-					
Age	-.360**	-				
Oocyte	.194**	.125*	-			
Consequence	.337**	-.024	.349**	-		
Subjective	.308**	-.026	.249**	.377**	-	
PBC	.194*	.017	.118*	.287**	.383**	-

Note: \*  $P < 0.05$ ; \*\*  $P < 0.01$ ; Oocyte = Attitudes towards oocyte donation; Consequence = Attitudes towards consequences; Subjective = Subjective Norms; PBC = Perceived Behavioural Control.

A logistic regression model was used to assess the ability of socio demographic variables and the Theory of Planned Behaviour (TPB) to predict intentions to donate. Regression analyses revealed that age (OR = .90,  $P < 0.0001$ ; B = -.11; df = 1; Wald = 23.23), 'Attitude towards the consequences of oocyte donation' (OR = 1.21,  $P < 0.01$ ; B = .19; df = 1; Wald = 9.90) and 'Subjective norms' (OR = 1.58,  $P < 0.05$ ; B = .46; df = 1; Wald = 5.13) (both components of the TPB) successfully predicted intentions to donate. 'Attitude towards oocyte donation' (OR = 1.05,  $P > 0.05$ ; B = .05; df = 1; Wald = 1.81) and 'Perceived behavioural control' (OR = 1.06,  $P > 0.05$ ; B = .06; df = 1; Wald = .06) did not predict intentions.

#### 6.4.6 Structural Equation Modelling Summary

Fig 6.4.1 presents the structural equation model, including specified interactions. Unlike the logistic model which found only two components of the TPB (and age) predicted intentions to donate, the SEM model found, younger age ( $\beta = -.03$ ,  $P < 0.001$ ) and three components of the TPB; namely high levels of 'Subjective norms', positive 'Attitudes

towards oocyte donation', and positive 'Attitudes towards the consequences of oocyte donation' ( $\beta = .16$ ,  $P < 0.001$ ) were predictive of intentions to donate. Age also had a direct influence on TPB components. The model accounts for 38% of the variance in the intention to donate. The overall fit of the model was good, with  $\chi^2 = 6.43$  (d.f. = 4,  $P = .170$ ) and fit indices of 0.99 for GFI, 0.98 for CFI, 0.96 for NFI, and 0.05 for RMSEA. Models where socio-demographic variables, other attitudes towards oocyte donation and the 'perceived behavioural control' component of the TPB were represented did not yield good fits.

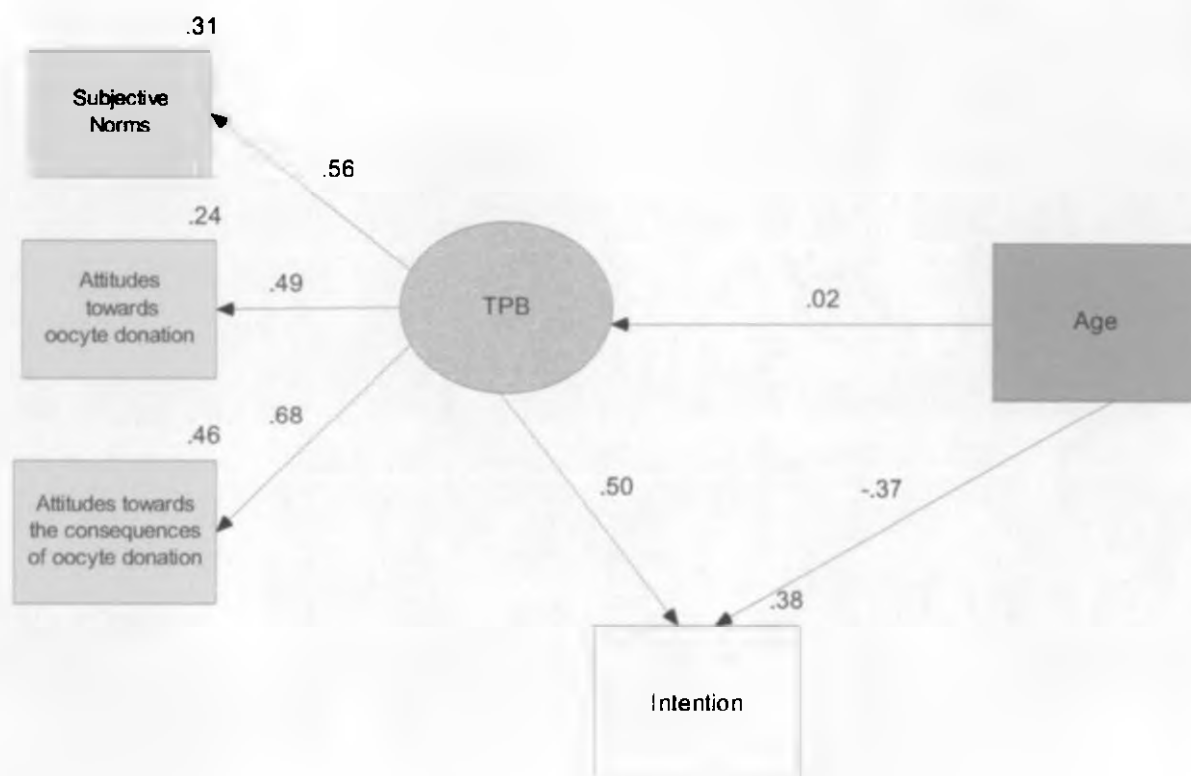


Figure 6.4.1: Structural model of oocyte donation for research

**Note:** Circles represent latent variables and squares represent observed variables. Values are standardised coefficients; all coefficients are significant at  $p < 0.05$ . TPB represents Theory of Planned Behaviour components; SEM analyses performed on AMOS 7.

## 6.5 Discussion

### 6.5.1 Overview of Findings

This study has found that nearly one third of women questioned would consider donating their oocytes for research. Burton and Sander (2004) reported similar figures of their clinical sample, whereas, these figures differ considerably from Choudhary *et al.*'s (2004) and Bjuresten's and Hovatta's (2003) studies who reported over half of their patient sample agreed to donate their embryos to research. The majority of potential intenders in our study reported no preference towards donating their oocytes towards research or fertility treatment, highlighting differences between patient groups and volunteers. Studies that have examined patient groups have noted a significant preference towards donating their oocytes to research as opposed to another infertile couple (Burton and Sanders, 2004; Bangsboell *et al.*, 2004; Newton *et al.*, 2007). Elford *et al.* (2004) and Fuscaldo *et al.* (2007) have noted that patients find the possibility of their genetic child being raised elsewhere distressing. It seems plausible that patient groups are more reluctant to donate their oocytes to another couple because they themselves are undergoing fertility treatment, and the thought of another couple achieving a successful pregnancy using their oocytes could be uncomfortable. In contrast, volunteers' ability (as studied here) to conceive is not being challenged and the possibility that a couple could parent their genetic child would most likely not have the same meaning or personal ramifications as it would for a patient couple.

There appears to be a strong altruistic motive underpinning the decision to donate. The majority of our potential intenders reported they would donate to find a cure for illnesses, improve fertility treatment and do something that makes a difference. Research on embryo donation for research has also noted altruistic motives for donation (Fuscaldo *et al.*, 2007),

as did some studies on oocyte donation for fertility treatment (e.g. Power *et al.*, 1990; Schover *et al.*, 1992; Sauer and Paulson, 1992; Söderström-Anttila, 1995; Ahuja, Mostyn and Simons, 1997; Ahuja *et al.*, 1998; Fielding *et al.*, 1998; Beatens *et al.*, 2000; Byrd, Siderbotham and Lieberman, 2002) but not all (Purewal and van den Akker, 2006). Other studies of oocyte donation for treatment suggest that oocyte donation allows some women the opportunity to pass on their genes (e.g. Kalfoglou and Geller, 2000a; Skoog-Svanberg *et al.*, 2003a). Since these two types of oocyte donation differ considerably (Mertes and Pennings, 2007), it is possible that oocyte donation for research represents truer altruistic motives for donation compared to oocyte donation for treatment. However, participants in this study were not asked to reveal other reasons for donating, such as, making up for a previous loss.

The majority of respondents (across groups) in this study did not perceive an oocyte as a potential life form, whereas patient groups are more likely to perceive embryos as potential children (Parry, 2006) which is a contributing factor in their general unwillingness to donate their embryos for research (Laruelle and Englert, 1995; McMahon *et al.*, 2003; de Lacey, 2005, 2007; Fuscaldo, Russell and Gillam, 2007). In clinical practice, patients are forced to think explicitly about embryos and gametes, have discussions about them with their physicians, undergo tests to assess the quality of their gametes and embryos and want their embryo to successfully develop into a foetus, all of which may be responsible for shaping patient's perceptions. Whereas, non-patients who are not confronted with the necessity to consider their oocytes or embryos so explicitly, are not fashioned into thinking of their oocytes as potential children.

### **6.5.2 Reasons for Parenthood**

There were no significant differences between donor groups in their attitudes towards parenthood. These findings contrast with the findings obtained in study 2 (chapter 5) that examined attitudes towards oocyte donation for fertility treatment. Study 2 and past studies have found that an important factor underpinning women's reasons for donating to fertility treatment was their appreciation of the desire for motherhood (e.g. Kalfoglou and Gittelsohn, 2000; Byrd *et al.*, 2002; Kirkman, 2003; Winter and Daniluk, 2004; Yee, Hitkari and Greenblatt, 2007). Other studies on women from the general population (Skoog Svanberg *et al.*, 2003; Purewal and van den Akker, 2006) including study 2, have found that women who were more likely to donate their oocytes for treatment were more likely to consider parenthood as important. In contrast to oocyte donation for fertility treatment, donation for research does not result in a child and this may be partly responsible for these differences. However, oocyte donation for research is dependent on other factors and amongst the most important were components of the TPB.

### **6.5.3 Theory of Planned Behaviour**

These findings confirmed previous work (Skoog Svanberg *et al.*, 2003; Purewal and van den Akker, 2006) and results obtained in study 2, which demonstrated the successful application of some components of the TPB to oocyte donation for fertility treatment. The correlation co-efficients from studies 2 and 3) revealed a significant relationship between components of the TPB and intentions. However, SEM analyses again found that perceived behavioural control did not predict intentions towards oocyte donation for research, just as it did not predict intentions towards oocyte donation for treatment (study 2). Results from study 2 were interpreted as indicating that oocyte donation for treatment may be a behaviour which is under the perceived behavioural control of the individual, thus



rendering the perceived behavioural control component of the TPB as ineffective in predicting intentions and behaviours (Fishbein and Ajzen, 1975; Ajzen and Fishbein, 1980; Sheeran *et al.*, 2003). It is likely therefore that the same would apply to oocyte donation for research and this will be discussed in more detail in the discussion chapter (9). However, clearly more research is needed to substantiate these assertions.

#### **6.5.4 Limitations**

There are some shortcomings with this study. In particular, relating to the outcome measurements used to assess components of the TPB and reasons for parenthood, along with the method of recruitment and representativeness of the sample. All of these issues are also relevant to study 2 (chapter 5) and have been discussed in the discussion section of that study and will also be discussed in chapter 9.

#### **6.6 Conclusion**

In this study, one third of women questioned would consider donating their oocytes for research and there appears to be a strong altruistic motive influencing their decision to donate. Some components of the TPB were successfully applied to oocyte donation for research and have the potential to inform recruitment practices and tailor clinical services. However, perceived behavioural control did not contribute to the intentions to donate oocytes. Future research extrapolating differences between oocyte donation for research and for fertility treatment is warranted and this was done in the study 4 (chapter 7) in the next chapter. Chapter 7 describes a qualitative study that assessed attitudes towards oocyte donation for treatment and research and qualitatively measured the application of the TPB to oocyte donation, in attempts to explain some of the findings from study 2 (chapter 5) and this study.

## 7. Study 4 A qualitative study of perceptions of oocyte donation.

### 7.1 Summary

The two previous studies (chapter 5 and 6) have used quantitative measurements to assess attitudes towards oocyte donation and parenthood. However, the aims of this study were to qualitatively assess the meaning of oocytes and oocyte donation for treatment and research among women from the general population in the UK using Interpretative Phenomenological Analysis (IPA). This study also assessed the application of components of the TPB in intentions and attitudes towards oocyte donation, in attempts to consolidate previous work in this thesis. Eight parous and nulliparous women from White and South Asian backgrounds, who reported no fertility problems, were recruited. In addition, one female and one male participant who reported involuntary childlessness were also recruited. RESULTS: Four interrelated super-ordinate themes were identified: *oocytes as 'Just a cell' versus 'Potential life'*; *oocyte donation as 'Altruism' versus 'Not normal behaviour'*; *importance of motherhood* and *the importance of genetic link*. Ethnic differences were observed in the final theme which identified the *importance of social support* and *reproductive control* in women's discourses in oocyte donation. Analysis revealed participant's feelings and thoughts about oocyte donation were complex, interwoven, and paradoxical. Further, participant's lived experiences also shaped their discourses and narrative accounts of oocyte donation. Quantitative studies have failed to identify complexities in women's discourses. The findings obtained in this study could be useful in enhancing the existing understanding of oocytes and oocyte donation.

## 7.2 Introduction

Oocyte donation has been used by women who are unable to get pregnant or unable to maintain a pregnancy using their own oocytes. However, since February 2007, scientists can now also use donated oocytes for medical research, such as stem cell research (HFEA, 2007). So now, women in the UK have a choice to donate their oocytes altruistically for treatment of others and for research. However, there is a shortage of women from the general population coming forward to donate (HFEA, 1998; Murray and Golombok, 2000; Blyth and Frith, 2008). This acute shortage means infertile patients have had to become oocyte donors themselves through oocyte share incentives set up by fertility clinics (Ahuja and Simons, 1996; Ahuja, Simons, Mostyn and Bowen-Simpkins, 1998, Ahuja, Simons and Edwards, 1999), which is far from ideal. There is a need therefore to understand the reason why women from the general population do not donate.

### 7.2.1 *Qualitative studies in oocyte donation*

As was noted in the previous chapters (chapter 1 and 2), there is a copious amount of studies that have focused on reasons underpinning oocyte donor's decision to donate, however there is no clear consensus on why women do donate<sup>7</sup>. In summary, studies from the US have found financial gain is an important factor (e.g. Sauer and Paulson, 1992; Greenfield, Mazure, Olive and Kiefe, 1995; Kalfoglou and Gittelsohn, 2000; Patriek, Smith, Meyer and Bashford, 2001; Lindheim, Frumovitz and Sauer, 2001; Klock, Stout and Davidson, 2003; Fusillo and Shear, 2007), whereas studies from some European countries (where commercial donation is not permitted) have provided evidence to suggest

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<sup>7</sup> The data has been reviewed for volunteer and commercial donors only, because arguably they are more likely to represent women from the general population, more so than patient or known donors. Patient donors belong to a distinct category of oocyte donors as they come from a patient population and donate their oocytes in order to be eligible for subsidised fertility treatment. Whereas, known donors often have close personal relationships with recipient couples and they donate their oocytes in the aid of their friend or relative.

that altruism is a key (e.g. Power, Baber, Abdalla, Kirkland, Leonard and Studd, 1990; Söderström-Anttila, 1995; Fielding, Handley, Duqueno, Weaver and Lui, 1998; Byrd, Siderbotham and Lieberman, 2002). Some studies have suggested women donate to make up for a loss (e.g. Klock, Stout and Davidson, 1999; Kalfoglou and Gittelsohn, 2000; Jordan, Belar and Williams, 2004), whereas, other studies have found donors demonstrate a deep appreciation for the desire for motherhood (e.g. Weil, Cornet, Sibony, Mandelbaum and Salat-Baroux, 1994; Kalfoglou and Gittelsohn, 2000; Byrd *et al.*, 2002; Kirkman, 2003). One of the limitations with these studies is that most of them have used a questionnaire design (e.g. Power *et al.*, 1990; Sauer and Paulson, 1992; Söderström-Anttila, 1995; Fielding *et al.*, 1998; Patrick *et al.*, 2001; Byrd *et al.*, 2002; Klock *et al.*, 2003; Jordan *et al.*, 2004; Fusillo and Shear, 2007). So, researchers only obtain answers to the questions that they have asked.

However, a minority of studies have used qualitative approaches to gather a deeper and explorative understanding of various important issues relating to oocyte donation (e.g. Snowdon 1994; Kalfoglou and Gittelsohn, 2000; Kalfoglou and Geller, 2000a, 2000b; Kirkman, 2003) (please note some of these studies have included a small number of known donors in their sample). There has also been some qualitative work done with known donors (Khamsi, Endman, Lacanna and Wong, 1997; Winter and Daniluk, 2004) and patient donors (Rapport, 2003; Blyth, 2004). Some studies have also reported qualitative data obtained from the psychological interviews done with women as part of the psychological profile used to assess the suitability of candidates (e.g. Raoul-Duval, Letur-Konirsch and Frydman, 1992; Weil *et al.*, 1994; Greenfeld *et al.*, 1995; Lindheim *et al.*, 2001). However, an inherent problem with these studies is that they are not reporting research interviews and it is highly likely donors will be 'impression managing' the

responses they provide to the mental health practitioner performing the clinical interview (Kalfoglou and Geller, 2000b).

Overall, the data obtained from these studies have been revealing. For example, although they have provided insight into the range of reasons why donors decide to donate their oocytes (Kalfoglou and Gittelsohn, 2000), they also found that donors concealed important personal information about themselves during the clinical interviews because of the fear they may be rendered unsuitable for donation by the mental health professional (Kalfoglou and Geller, 2000b). Qualitative studies have also found that oocyte donors generally believe the genetic ties between parent and child are unimportant in the parent and child relationship (Snowdon, 1994; Kirkman, 2003; Winter and Daniluk, 2004) and that some donors received maternal gratification for donating their oocytes (Raoul-Duval *et al.*, 1992). Rapport (2003) found that unlike other studies that have suggested patient donors donate their oocytes out of altruism (e.g. qualitatively – Blyth, 2003 and quantitatively – Ahuja *et al.*, 1997, 1998), she found patient donors were motivated by self interest in the quest to achieve motherhood by any means available to them. However, with the exception of Rapport (2003) and a few others (e.g. Kirkman, 2003), most of these studies have not used a theoretical approach to analyse their data. An advantage with using theoretical approaches in qualitative data is that it provides techniques and frameworks to accurately describe, decode, and interpret the meanings of the phenomena under investigation (Fryer, 1991). Further, these studies focus on actual oocyte donors and cannot be easily used to speculate on why the majority of women from the general population do not consider donating their oocytes.

There are only a handful of studies that have examined women from the general populations attitudes towards oocyte donation and most of these studies have used

quantitative measurements (e.g. Kazem, Thompson, Hamilton and Templeton, 1995; Chliaoutakis, 2002; Chliaoutakis, Koukouli and Papadakaki, 2002; Skoog-Svanberg *et al.*, 2003a, 2003b; Purewal and van den Akker, 2006; Isikoglu, Senol, Berkkanoglu, Ozgur, Donmez and Stones-Abbasi, 2006; Brett, Sacranie, Thomas and Rajkhowa, 2008) or used a structured interview format (e.g. Lessor, Reitz, Balmaeada and Asch, 1990). Nearly all of the studies revealed that despite the fact that the majority of women from the general population have positive attitudes towards oocyte donation, most still would not consider donating their oocytes or receiving donated oocytes. However, some of these studies have found there were some important factors which predicted intentions to donate. For example, some investigations have found components of the Theory of Planned Behaviour (TPB) (Ajzen, 1985, 2002) predicted intentions towards oocyte donation for treatment (Skoog-Svanberg *et al.*, 2003b; Purewal and van den Akker, 2006, and study 2 in chapter 5) and research (study 3 in chapter 6). That is, women who report positive attitudes towards oocyte donation, report high levels of subjective norms and perceived behavioural control (only in Skoog-Svanberg *et al.*'s and Purewal's and van den Akker's studies) are more likely to report an intention to donate their oocytes. These studies have suggested that the TPB is a promising model in oocyte donation. However, to the author's knowledge, there has been no qualitative work done with women from the general population regarding their thoughts and perceptions of oocyte donation. Qualitative methodology could be useful in uncovering unknown fears, concerns and opinions (Hale, Treharne & Kitas, 2007) in relation to oocyte donation and provide a more detailed explanation of why women [in general] do not consider oocyte donation. In addition, qualitative data could also be used to validate theories and quantitative instruments (Oppermann, 2000). Indeed, Dunn, Mohr, Wilson and Wittert (2008) qualitatively examined the reasons behind decisions to either choose or avoid fast foods using the TPB as a topic guide to the interviews. They examined beliefs and perceptions associated with fast-food consumption

in an Australian sample and found qualitative support for the TPB model. In addition, with the exception of Purewal and van den Akker (2006), no previous research has addressed oocyte donation behaviours in non-White populations.

The aims of this study were therefore to qualitatively assess the meaning of oocytes and oocyte donation for treatment and research among women from the general population in the UK using Interpretative Phenomenological Analysis (IPA). In addition, this study also assessed the application of components of the TPB in intentions and attitudes towards oocyte donation, and considered White and South Asian women's interpretations separately.

### **7.3 Method**

#### ***7.3.1 Participants***

Parous and nulliparous women from White and South Asian backgrounds, who were all under the ages of 35 years old (35 years is the upper age limit that UK clinics will accept) and reported no fertility problems were recruited (Table 7.3.1 presents the demographic characteristics of participants). Four participants described their ethnicity as White (Linda; Monica; Rachel; and Yvette) and four as South Asian (Manjeet; Pooja; Ranjeet; and Simran). As can be seen from the table, four participants had children and the remaining were childless. Further, four were currently in a relationship and four were single. In addition, one female and one male who reported involuntary childlessness were also recruited. Catherine is a married, 35 years old White female, diagnosed with unexplained infertility and currently undergoing fertility treatment. At present, Catherine has not donated her oocytes nor is she receiving treatment using donated oocytes. Robert is a married, 48 years old White male. He has reported a life long desire to parent a child,

however his personal life circumstances prevented him from starting a family when he was young and now his present wife is too old to bear any children. If Robert and his wife decided to pursue fertility treatment, they would most likely need to accept donated oocytes. Catherine and Robert were interviewed as case studies on involuntary childless people's thoughts towards oocyte donation. Their data were used to provide an illustrative comparison between involuntary childless and fertile participant's lived experiences and an opportunity to explore how individual subjectivity may shape attitudes and thoughts towards oocyte donation. A small sample was recruited because IPA is a model that is best suited with a small number of participants (Smith *et al.*, 1999). People under the age of 18 and people who do not speak in English were excluded from the study.

### **7.3.2. Procedure**

This study was carried out during 2008. The procedure has been described in detail in the method section (chapter 3). However, in summary, ethical approval was sought and granted by the University's ethics committee. Participants were recruited using the 'snowball' sampling technique. Informants of the authors were asked to nominate or contact their friend or relative who may be interested in participating in this study. An information sheet and informed consent form presenting details of the study were sent to all participants who expressed an interest. Participants were assured of anonymity and confidentiality and their names were changed in the transcripts to conceal their identity. Interviews were arranged with all participants at a time and location convenient to them. Full informed consent was obtained for all participants prior to participation in the study.



Table 7.3.1: Demographics of Participants

Name	Age	Gender	Ethnicity	Children	Failed Pregnancies	Marital Status
Linda	25	Female	White	0	0	Single
Yvette	32	Female	White	0	0	In long term relationship
Monica	30	Female	White	2	0	Divorced and single
Rachel	32	Female	White	1	0	Separated and single
Manjeet	22	Female	South Asian	0	0	Single
Ranjeet	28	Female	South Asian	0	0	Married
Pooja	21	Female	South Asian	1	0	Married
Simran	31	Female	South Asian	2	0	Married
Robert (involuntary childless)	48	Male	White	0	-	Divorced and re-married
Catherine (involuntary childless)	35	Female	White	0	0	Married

Names have been changed to protect participant anonymity

The interviews were semi-structured and covered participant's socio-demographic characteristics and key issues that emerged from study 2 (chapter 5) and 3 (chapter 6) and components of the TPB were also incorporated in the interview topic guide (see appendix 2). Specifically, participants were asked to construct meanings around their perceptions of oocytes; oocyte donation for treatment and research; the consequences of oocyte donation; anonymity and disclosure; social support and behavioural control; and the importance of parenthood and genetic link in relation to their own 'lived experiences'. TPB components included questions on their attitudes towards oocyte donation [for treatment and research]; attitudes towards the perceived consequences of oocyte donation; perceived behavioural control and subjective norms. Although, the information sheet contained information on oocyte donation for treatment and research and UK legislation pertaining to oocyte donation, this information was repeated at the beginning of each interview, so participants were fully informed of all key concepts and issues. All interviews were tape recorded (after seeking permission from the participants), and lasted between 30 minutes to 1½ hours.

### **7.3.3 Data Collection and Analysis**

Interpretative Phenomenological Analysis (IPA) (Smith *et al.* 1996, 1999, 2003, 2006) was used to analyse the interview transcripts. This method was fully described in the Introduction chapter. However, in short, the IPA is rooted in phenomenology and hermeneutic epistemologies and is concerned with participant's subjective experiences and their personal interpretations of the world around them. According to Smith and Eatough (2006), the IPA is the "analysis of how individuals make sense of their lived experiences" (pp 325). This method was chosen because IPA allows a detailed exploration of the interpretations and perceptions of participants regarding a particular phenomenon, in this

case oocyte donation. IPA is an idiographic approach that offers a systematic approach to understand and interpret the 'lived' experiences of participants (Smith and Osborn, 2007) and the in-depth analysis means it is well suited to investigate novel or sensitive areas (Brewer, Eatough, Smith, Stanley Glendinning and Quarrell, 2008).

So, according to IPA, each interview transcript was read and re-read and the left side of the paper was used to make notes and capture initial thoughts and themes that emerged from the transcript. The process was continued, but this time the right side of the margin was used to identify important themes. All emergent themes and the accompanying data extracts that were identified using the right side of the margin were then presented on a table and connections were made between the themes. Higher order themes and sub-themes were later clustered together into related groups and ordered coherently. This process was repeated for all transcripts and all the themes that have emerged for each transcript and the accompanying data were compiled on a 'master' table. Finally, the 'master' table was reviewed and the most important super-ordinate concepts and their allied sub-ordinate themes that emerged from the table, which were significant for the majority of participants were identified. Thus, a small number of super and sub-ordinate themes were established.

#### ***7.3.4 Reflexivity***

The IPA encourages the researcher to reflect on the values and objectives they bring to their research (Smith, 1994) and recognise that their ideological stance and life experiences may affect how they make sense of the interview and data analyses. In addition, the social identities of the researcher and participant are also important in shaping the interview. As mentioned before in chapter 4, the researcher is a single, nulliparous, British South Asian

female who shared a similar ethnic background to the South Asian participants and a similar national/cultural background to the White participants. The social identities of participants have been described in Table 7.3.1. However, the researcher was more informed about oocyte donation and infertility related issues than fertile participants in this study (but perhaps not as much as the infertile group, i.e., Catherine and Robert). Thus, there was a real potential for power imbalance during the interviews. In attempts to address this, all participants were given information about oocyte donation in the information pack and this information was repeated at the beginning of the interviews. In addition, all interviews were semi-structured and at a location of the participant's choosing, in order to facilitate collaboration and enable participants to have control over the discussion.

#### **7.4 Results**

Four interrelated super-ordinate themes were identified after analysing the data. First, the analysis revealed participants used two different and opposing frameworks to represent oocytes (7.4.1). Participants drew on a science discourse to emphasise the personal unimportance and relative passivity of oocytes but also portrayed oocytes as powerful entities that were integral in women's ability to conceive and her femininity. Second, participants demonstrated ambiguity towards oocyte donation and attached alternative and competing explanations to account for the behaviour (7.4.2). These explanations included perceiving oocyte donation as an altruistic act, while also considering oocyte donation as not 'normal' behaviour. In addition, analytic observation found subjective experiences relating to fertility status accounted for some of these explanations. Third, the analysis revealed the importance of motherhood and a genetic link between parent and child in shaping the narrative accounts and acceptability of oocyte donation (7.4.3). Finally, the data analysis also found the importance of social support and reproductive control in

justifying the decision not to donate among South Asian women but not White women (7.4.4).

#### **7.4.1 'Just a Cell' versus 'Potential Life'**

Oocytes were constructed in two contradictory ways. Oocytes were described as 'cells', a result of the menstrual cycle, which were passive and powerless until they had been fertilised by the sperm. However, they were also constructed as powerful entities, which are essential in creating life and contribute to the uniqueness and empowerment of women. First, participants used a variety of discursive devices to minimise the importance of oocytes. All but four participants compared their oocyte to 'just a cell', 'blood' or 'another piece of organ'. Some participants, including Monica, used a science discourse to strengthen their arguments and argued that their schooling had taught them that an oocyte can only become a potential life form once it had been fertilised, until then it's just a cell. The science discourse served to rationalise their beliefs and represented the oocyte as a relatively passive construct. Monica also acknowledged her religion (Christianity, although she does not practice) would oppose her medical interpretation and many of the other participants (except Ranjeet) had also asserted their beliefs were not stemmed from religious dogma.

*"an eggs an egg, it's a monthly cycle that I have and nothing else really...my religion probably would say anything a part of you is sacred... personally I think it's science that made me think that an eggs an egg, it's like another piece of organ"*

*Monica*

However, their discourses were paradoxical and although they reported no biological, personal, or social significance of oocytes, they acknowledged you can 'produce a baby' with an oocyte and therefore simultaneously, oocytes were in fact very precious to them. Linda believed her perceptions of oocytes were temporal and their importance would change depending when she has a use for them. She believed her oocytes would become 'sacred' once she has decided to become a mother. Linda used the word 'sacred' not to draw a religious interpretation of oocytes (she does not practice any religion), but to emphasise the symbolic significance of oocytes in her ability to conceive a child. Further, although Pooja had initially described oocytes as nothing more than a 'collection of cells', she later discussed in awe the wonders of oocytes and the potential knowledge that could be learnt from them and the medical advancement that can be achieved from researching oocytes. Whereas, Manjeet invoked a feminist discourse and used language to highlight the uniqueness and empowerment that oocytes give to women over men by enabling them to bear children.

*"I guess at the moment because I'm not like planning on having children yet I don't really think of my eggs as having a like function. They kind of go each month, if that makes sense...but I guess if I was trying for a baby then you know the eggs will probably take on a different meaning and they would become more sacred to me and I'd see them like potential babies."*

Linda

*"you can find out so much from the eggs...you can find out a lot about potential diseases."*

Pooja

*"It's that cycle of our period that makes us that egg, that makes us women and you know it's unique. Men can't do that, so it's our kids and part of us that can produce kids."*

Manjeet

Yvette described the dilemmas and ambiguities that participants experienced when they discussed the importance of oocytes. Although, Yvette represented her oocytes as cells in an attempt to be logical and 'sensible', she could not deny the potential of oocytes in developing into a human being –her child.

*"I would like my perception as a cell, because sometimes you want to be sensible so that's me trying to be sensible. Because I think that you can't help it but wonder because ...it's supposed to develop into a life, into what would be your child"*

Yvette

In many ways, most of the participants in this study have been trying to be 'sensible' and distance themselves from oocytes. For example, they used a science discourse to assert a medical and factual interpretation of oocytes and rejected any religious doctrine, which would have been based upon faith and personal beliefs. Yet their personal narratives were full of repertoires that emphasised the social and personal significance of oocytes. These repertoires of ambivalence were also present when participants discussed oocyte donation for treatment and research.

#### ***7.4.2 Oocyte Donation as altruism versus oocyte donation as not 'normal'***

##### ***7.4.2.1 Altruism***

None of the participants reported they would donate their oocytes and nearly all participants reported ambiguous feelings towards oocyte donation. Participants did not construct oocyte donation as a single, unitary account. Rather, they drew on two possible accounts of oocyte donation which co-existed together. First, women reported they had very positive attitudes towards oocyte donation and it was perceived to be a respectable way of having a child or to contribute to science. Some of the adjectives participants used to describe oocyte donors were: "altruistic", "selfless", "kind" and "brave". Participants acknowledged, with some admiration, oocyte donors contribution in helping infertile couples or medical scientists/illness and disease suffers despite the physical hardship they endured. In addition, recipient couples were also constructed as good people who are desperate and want to have children and were grateful for the donors 'gift'.

*"I guess it's a very selfless thing to do and quite altruistic"*

Linda

*"I think it's an amazing gift I think erm for women who are not able to conceive their own child, to be able to be given that chance by someone else it is a gift of life"*

Catherine

##### ***7.4.2.2 Not Normal Behaviour***

However, oocyte donation was only perceived to be acceptable for 'others' (other women to donate and other infertile couples to receive) and never themselves, even if they were



experiencing difficulties conceiving, they would not want to receive treatment using donated oocytes, nor were they willing to donate their oocytes.

*"In general I think it's a good opportunity if that's the only why you can have kids. I wouldn't I personally don't think I would want to have if for myself"*

Rachel

The main reasons why women could not consider donating their oocytes, were because oocyte donation was considered not to be a 'normal' behaviour (see Monica's excerpt). Thus, implying women who donated their oocytes are not normal. There was a degree of mistrust and bewilderment in oocyte donor's motives for donating. For example, Simran repeatedly asked "why would they?" She could not think of any motive that would induce women to donate except financial incentives. This may have in part also reflected her own stance because she reported there were no instances or incentives which could have persuaded her to donate. Yvette also believed that if she was infertile, she would refuse oocyte donation treatment on principle and choose to adopt a child instead. Yvette perceived the recipient couple's behaviour as "selfish" because of their willingness to allow women to go through physical risk for them to become pregnant and their unwillingness to adopt a child.

*"it might be useful for some but I personally don't think I would donate... I don't know it's the thought of egg donation just doesn't sound normal, it doesn't sound like something I would want to do."*

Monica

*S: "I can understand people who go for treatment and this is the way of them getting treatment, but I can't understand somebody voluntarily going [donating], do you get me?...Why would somebody go and do that? Is there some kind of financial benefit?"*

*I: NO THEY DON'T GET MONEY FOR DOING IT [IN THE UK]*

*S: See that, so why would they?"*

**Simran**

*"I would feel a little bit selfish maybe to make someone to go through all of this just because I have the need of a getting pregnant and deliver. I wouldn't use egg donation I would feel a little bit selfish. Why do you need to be pregnant? To deliver a baby? Why because we want a little baby, you cannot adopt even a child?"*

**Yvette**

#### *7.4.2.3 Importance of Subjective Experiences*

Some of the negative representations of oocyte donors and recipients may be reflective of participants lived experiences. Fertile participants such as Simran and Monica have conceived their children naturally and do not need to consider donating or conceiving through oocyte donation. In addition, fertile participants (but never involuntary childless participants) frequently changed some of their attitudes and standpoints. For example, at the beginning of the interview Pooja reported she would be willing to donate her oocytes despite acknowledging it would clash with her religion.

*P: "I wouldn't mind donating my eggs to an infertile couple, even for research. I wouldn't mind but saying that, it does have some ethical kind of consideration for me.*

*I: LIKE WHAT?*

*P: Well mostly religious because they would not want you to actually do research on eggs."*

Pooja

However by the end of the interview she had decided she no longer believed she would or could.

*"The thing is, as this interview has gone on I think I wouldn't donate my eggs ... because it's a very confusing topic. I have so many ideas running through my mind that I wouldn't know what to do. It's very hard to decide, but I think your child is kind of linked to you genetically, you always have that connection with them and you can't give them away."*

Pooja

Ranjeet's behaviour during the interview was also unpredictable and despite many attempts to reassure Ranjeet this is part of the interview process, she stopped the interviews several times to inform me she had changed her opinions after thinking and talking them through. It was quite common for participants, on reflection, to construct an alternative account. Participant's negative reactions and uncertain behaviour probably reflected their lack of prior thoughts of oocyte donation, third party conception and importance of a genetic link. This is partly because their lived experiences had not required them to consider these issues and oocyte donation for most has a low social presence; so although they were *aware* of it, they had never *considered* it (as a donor, recipient or offspring) before.

Catherine and Robert, on the other hand, were positive towards oocyte donation and they did not display any uncertainty in their discourses or behaviour, which were firm and resilient throughout the interviews. This is possibly because they had experienced life events which necessitated the need to consider third party conception and re-evaluate the importance of genetic material and their own genetic lineage. For example, when Robert was asked how he would feel if his wife had donated oocytes, he knew immediately and was able to articulate his feelings in detail (he would feel jealous, see Robert's excerpt below), unlike many of the fertile women who were interviewed. In addition, Catherine was aware that personal experiences shape attitudes and opinions and believed that people who have not experienced their fertility being challenged would interpret oocyte donation and infertility differently. She also felt strongly that she did not want to be 'judged' for the decision she has made nor will make regarding her fertility treatment by people who have not experienced fertility problems. Catherine realised that people do indeed make judgements, as has also been found in this study among fertile participants.

*"I'd be jealous I would think... I think I'd feel a bit left out that something had happened and I should have been aware of."*

Robert

*"I would just say that anyone who hasn't been in my situation shouldn't judge me it's that simply...I think people that have never faced infertility, probably very easy for them to make a decision as to whether they would or they wouldn't but I bet they will change their minds if they were in that position"*

Catherine

Participant's attitudes towards oocyte donation for treatment and research were paradoxical and many demonstrated ambivalence towards oocyte donation and the women who donate their oocytes. One of the reasons why women maintained these dualist conflicts were because of their attitudes towards the importance of motherhood and the importance of a genetic link between mother and child.

#### ***7.4.3 'Importance of Motherhood' and the 'Importance of a Genetic Link'***

Mother/parenthood was constructed as essential in women's lives and it was assumed every woman who wanted to become a mother should and must become a mother. This is despite any physical or biological impairment preventing her from becoming pregnant (See Monica's excerpt). All participants had positive attitudes towards assisted reproductive technologies because it enabled women to have children. It is for this reason that oocyte donation was considered to be an acceptable means of achieving a family and all participants shared positive attitudes towards oocyte donation (albeit it was only considered suitable for 'other' women). All participants understood the social importance of children and appreciated the desire for motherhood. The appreciation for the desire for motherhood underpinned the social acceptability of oocyte donation. In the excerpts below, participants have used language that maximised the importance of motherhood in their lives and narrated a romantic and idealised discourse of parenthood, irrespective of their parity and fertility.

*"Just because your body doesn't let it happen doesn't mean you can't have a child"*

Monica

*"I can't see beyond 30 not having a child. My life will be defined by my child."*

Manjeet

*I: "DO YOU THINK YOU CAN BE HAPPY IN LIFE WITHOUT CHILDREN?"*

*R: I think there can be happiness in life but there's always going to be a question mark. There's always going to be a gap...there's a gap there or a fork in the road...Well I think it would give you an extra spurt to do things [ having children], something to come home to, to plan for and yes to re-experience your own childhood and also actually find out about yourself."*

Robert

Although all participants considered mother/parenthood to be vital in an adult's life and contributed significantly to the pursuit of happiness and fulfilment, they still would not consider donating their oocytes. The reluctance to donate appeared to stem from the perceived importance of a genetic link between parent and child, which did not reflect or diminish the importance of motherhood. The importance of motherhood made oocyte donation acceptable for 'others'. Whereas, the perceived importance of a genetic link between parent and child made oocyte donation unacceptable for themselves. Participants would not donate their oocytes because they likened oocyte donation to child relinquishment, even though many of these participants reported they did not consider their oocytes as potential beings. The most prominent reason underpinning women's decision not to donate was their belief that the donor child would still remain their genetic child and they were unwilling to let another couple raise their genetic offspring (see Linda's excerpt). For many participants including Manjeet, oocyte donation for research was preferable to oocyte donation for treatment because there would be no child created. This ensured their genetic lineage would remain firmly in their family.

*"I feel like they were mine and I should be looking after them"*

Linda

*"I think I would be more happy for them to use it for research rather than actually giving it to someone else...I know that no one else will have a baby from it. It's just probably me, I think I don't want someone else having my genes in that way."*

Manjcet

Participants also anticipated problems with receiving donated oocytes and reported a reluctance to consider treatment using donated gametes because of the lack of genetic connectedness. Rachel's excerpt below is interesting because she highlights the complexities in oocyte donation as women carry and rear a child, which is biologically but not genetically related to them. She has a fear that "there is something else in it", which most likely refers to the genetic contribution of the oocyte donor. Whereas, adoption in her eyes is more straight forward because there is no genetic or biologic confusion, as there is neither. Rachel believed the lack of genetic ties between parent and child, (despite biological ties) could jeopardise their relationship. Further, she used language that objectified the donor child by describing it as 'not a good one'. Rachel presented a scenario where there are difficulties in the relationship between parent and donor child and she portrayed the donor child as responsible for these problems. The objectification which had been levied at the donor child represents Rachel's feelings of distrust towards a child that does not share her genetic origins.

*R: "I still would feel as if it is not entirely my own child. There is something else in it. Possibly it won't be but its still I don't know how I would react, how I would connect with the child. It's different if you adopt a child and you know it's not yours rather than having one and always thinking that it's not yours.*

*I: BECAUSE IT ISN'T GENETICALLY RELATED, EVEN THOUGH YOU'VE CARRIED IT?*

*R: Yeah, yeah. I think that would cause a little bit of trouble for myself... what if there is some behaviour that you can't relate to and if especially if you have problems, if it's not a good one. I think that wouldn't help getting a better bond with the child."*

**Rachel**

#### **7.4.4 Social Support and Reproductive Control**

All participants characterised oocyte donation in a socio-cultural context and were aware that they needed or desired the support of family and friends in deciding to become an oocyte donor. However, there were variations between participants depending on their ethnicity. White participants generally reported they believed their friends and family would support their decision if they decided to become an oocyte donor; however the decision would ultimately be theirs to make. A commonality in White women's narrative account is a strong belief that they are in control of their reproductive decision making and they could not be easily persuaded to either donate their oocytes or not to donate (See Catherine's excerpt). Further, they believed they would have the support of friends and family if they decided to donate their oocytes (see Yvetter's excerpt). However, South Asian participants generally reported their friends and family would not support their decision, and this in turn meant they have little control over the decision to become an



oocyte donor (See Ranjeet's and Simran's excerpt). South Asian women were more likely to report oocyte donation would not be compatible with South Asian culture and would be considered as a novel or 'bizarre' behaviour. South Asian women used the behavioural control discourse to justify their decision not to donate by reporting they do not have social support, so they *can not* donate.

*"to be really frank I think once I've made the decision, that's my decision made and I'm not going to be influenced by what other people may or may not think, whether that's dependent on bias or religion or misunderstanding. I think as long as I'm in control, I know that all facts involved and I will stick with my decision."*

Catherine

I: "DO YOU THINK THEY WOULD BE SUPPORTIVE ON YOUR DECISION?"

Y: *Yeah I think so I think so. Yeah I think many people probably will be just willing to [support]. Many people I think will be trying to make sure that I thought about it properly and that they would just try to be really caring and yeah in the end they would be supportive. Yeah"*

Yvette

I: "IMPORTANT PEOPLE IN YOUR LIFE, WOULD THEY SUPPORT YOU?"

R: *Probably not, they would probably get a bit erm you know probably like scared. Like why would you want to... I think they might be a bit closed minded about that and just think about how its going to affect you and no one has ever done it, its not in our culture you know, all these things going through their heads and it would just be bizarre for them"*

Ranjeet

*"It would be too difficult [to donate], because you don't you know, again it's not the done thing in our society. Its society isn't it. You are what your society wants you to be."*

Simran

White and South Asian participants all reported they would not donate their oocytes. However, the lack of social support and control in making the decision to donate was a contributing factor for South Asian women, but not White women.

### **7.5. Discussion**

Interpretative Phenomenological Analysis revealed participants' feelings and thoughts about oocyte donation were complex, interwoven, and paradoxical. Oocytes were seen both as nothing more than biological material and a significant and symbolic proof of their femininity and womanhood. Participants also reported alternative explanations of oocyte donation. Oocyte donation was portrayed as an acceptable means to achieve a family and a fine example of altruism and humanity. However, oocyte donation was also perceived to be a behaviour which was considered to be abnormal and bizarre and personally unacceptable. Participants' beliefs on the perceived importance of motherhood were responsible for the social acceptability of oocyte donation. Whereas, the perceived importance of a genetic link between parent and child underpinned the personal unacceptability of oocyte donation. Finally, social support and reproductive control justified the decision not to donate among South Asian participants (in this sample) but not White participants.

Participants' medical interpretations of oocytes as 'just cells', reflect the medicalisation of women's reproductive bodies (e.g. Oakley, 1980, 1984; Oinas, 1998; Brown and Webster,

2004; Earle and Letherby, 2007; Strickler, 2008). Oocytes were portrayed as biological materials and insignificant until they have been fertilised by the sperm. This also could be construed as reflective of a patriarchal society (Ehrenreich and English 1979, Oakley 1980), where women are passive and unimportant until they achieved union with a man. Other studies have also reported that embryos were perceived to be more of a 'life' than oocytes (Söderström Anttila *et al.*, 2001; Kazem *et al.*, 1995; Kirkman, 2003; Roberts and Throsby, 2008). However, hidden discourses revealed oocytes also had a personal and social significance for participants. Oocytes represented women's children, their ability to conceive and contributed to their uniqueness and empowerment. Further, participants would not donate because they were unwilling to allow another woman to become pregnant and raise their genetic child. Quite clearly oocytes were more than 'just cells' to these women. These findings link in well with other studies which have examined oocyte sharing (Rapport, 2003) and embryo donation (Provoost, Pennings, De Sutter, Gerris, van de Velde and Dhont (2008) among infertile patients. For example, Rapport's (2003) work with infertile patients entering an oocyte share program revealed similar results. Patients spoke about oocytes in 'uncertain and ambivalent terms' (pp 34). On the one hand they likened oocyte donation to blood or organ donation and dissociated themselves from the oocytes, but on the other hand they expressed grave doubts about donating their genetic material. Provoost *et al.* (2008) also found that patients simultaneously moved between a medical-technical interpretation of embryos to a perspective that symbolically linked their embryos to themselves and their relationship with their partner. Consequently, Boden, Hunt and Williams (2002) highlighted the concerns they had about women entering an oocyte share incentive. They asserted it was important that the fertility clinics understood that the concept of an oocyte will differ among women and for some women an oocyte means biological material but for others it could mean a potential child. This study has shown that within the same woman, an oocyte means both biological material and a

potential child. It is essential therefore that any fertility clinic recruiting oocyte donors should first explore in depth women's perceptions of oocytes. If women's discourses reveal perceptions of oocytes as potential children, then they should emphasise the implications of their donation within the context of their personal narratives.

Boden *et al.* (2002) noted that many fertile women 'can go through life successfully, and reproduce successfully, without considering the concept of an egg' (pp 48). Indeed, that has been confirmed in this study. It was during this study that many of the participants first considered their oocytes, oocyte donation or threats to their fertility and genetic lineage. Data analyses demonstrated that although participants revealed positive attitudes towards oocyte donation, oocyte donation was only considered to be acceptable for 'others' and not themselves, confirming previous work (Murphy, Jones, Hallam, Martin, Hakin and van den Akker, 2002). Participants were also suspicious of the motives of oocyte donors and believed oocyte donation was not 'normal' behaviour. In addition, women seeking fertility treatment using donated oocytes were portrayed as selfish for allowing donors to undergo a risky medical procedure for their benefit and for their unwillingness to adopt children. Further, children conceived through donated oocytes were also portrayed as deviant and disruptive. Thus, oocyte donation was not considered to be a normative behaviour. These results are consistent with other work that has found women who fail to conceive children naturally tend to be considered to be socially and medically deviant (Earle and Letherby, 2007). In part these findings can be explained in terms of the importance of lived experiences in shaping attitudes and behaviour. Fertile participants have not experienced a reality where their fertility has been challenged and consequently they can subscribe to the social norms and cultural expectations of biological and genetic parenthood (Oakley, 1980; Ulrich and Weatherall, 2000). These findings were also observed in study 1 (chapter 4), where most participants expected and desired genetic parenthood despite claims that

genetic bonds were not important to them. However, infertile populations who are forced into considering childbearing options which consist of third party conception, need to deviate from the social norms and construct a reality where oocyte donation is acceptable (Strathern, 2002; van den Akker, 2007).

Although, none of the participants in this study would consider oocyte donation for treatment or research or use treatment using donated oocytes if they were infertile (except Catherine and Robert), they still shared positive attitudes towards oocyte donation. This was because all participants recognised the desire for parenthood, which in turn made oocyte donation socially acceptable for 'others'. Consistent with previous research, parenthood was constructed as essential in people's lives and all participants reported romantic and idealised narratives of parenthood (e.g. Oakley, 1980; Ussher, 1989; Ulrich and Weatherall, 2000; Gillespie, 2000; Miller, 2007; Hadfield, Rudoe and Sanderson-Mann, 2007; Purewal and van den Akker, 2007-study 1 chapter 4). Research with oocyte donors has also found that donors report a deep appreciation for the desire for motherhood (e.g. Raoul-Duval *et al.*, 1992; Snowden, 1994; Weil *et al.*, 1994; Kalfoglou and Gittelsohn, 2000; Byrd *et al.*, 2002; Kirkman, 2003; Winter and Daniluk, 2004; Yee *et al.*, 2007). However, in contrast to the findings in this study with women from the general population, studies with oocyte donors have revealed donors do not report the importance of a genetic link between parent and child (Weil *et al.*, 1994; Snowden, 1994; Ahuja *et al.*, 1998; Beatens *et al.*, 2000; Byrd *et al.*, 2002; Kirkman, 2003; Winter and Daniluk, 2004). The perceived importance of genetic ties between parent and child was one of the most influential factors which underpinned women's reluctance to donate their oocytes in this study.

Further, although none of the participants were willing to donate their oocytes for research, most prefer oocyte donation for research than treatment. This was primarily because there would be no resultant and genetically related child through this donation. Perceptions of the [un]importance of genetic ties could be key in distinguishing between women who decide to donate their oocytes to women who do not. Indeed, recent quantitative studies with women from the general population have found women who believe genetic ties are unimportant are more likely to report an intention to donate oocytes than women who believe genetic ties are important (Skoog-Svanberg *et al.*, 2003a, 2003b; Purewal and van den Akker, 2006). These findings were also apparent in the quantitative study that examined women's attitudes towards oocyte donation for treatment (study 2 chapter 5). Women who endorsed the importance of a genetic link between parent and child were significantly less likely to consider donating their oocytes than women who did not believe in the importance of genetic ties. It is possible that donors find it easier to relinquish their oocytes because they matter little to them. However, the influencing effects of attitudes towards the importance of genetic link or parenthood were not evident in the quantitative studies that examine attitudes and intentions towards oocyte donation for research (study 3 chapter 6). This is most likely because there is no resultant child in donation to research; hence attitudes towards genetic ties and parenthood are not so relevant.

This study also qualitatively evaluated the application of some components of the TPB to oocyte donation. The data analyses revealed that women's attitudes and perceptions of oocyte donation were multifaceted. For example, all participants had positive attitudes towards oocyte donation, however, they did not consider oocyte donation to be a normative behaviour. This may explain why women from general populations report positive attitudes towards oocyte donation, but do not report an intention to donate (e.g. Kareem *et al.*, 1995; Chliaoutakis, 2002; Chliaoutakis, Koukouli and Papadakaki, 2002; Skoog-Svanberg *et al.*,

2003a, 2003b; Purewal and van den Akker, 2006; Brett *et al.*, 2008). Past studies have also found that attitudes and intentions in the TPB model rarely predict actual behaviours (Conner and Armitage, 1998; Sheeran, 2002). It is possible that this study may provide some insight into why women from the general population do not report an intention to donate. Participants in this study demonstrated ambivalence towards oocyte donation, which means they held both positive and negatives towards oocyte donation and past quantitative studies have failed to identify these complexities in attitudes.

Furthermore, this study found subjective norms and perceived behavioural control factors were not important to White participants in this sample and did not appear to have a significant bearing on their attitudes or intentions. However, low levels of subjective norms and perceived behavioural control did feature in South Asian participant's discourses. Data revealed that oocyte donation was perceived to be conflicting with South Asian culture and conventions, which meant there was little social support if women wanted to donate their oocytes and this is consistent with previous reports (Bharadwaj, 2003; Purewal and van den Akker, 2006; Culley *et al.*, 2004). On the whole, these findings demonstrated the limitations of relying exclusively on quantitative measurements. Previous quantitative studies that have assessed components of the TPB in relation to oocyte donation (Skoog-Svanberg *et al.*, 2003a, 2003b; Purewal and van den Akker, 2006, study 2 Chapter 5 & study 3 Chapter 6) have failed to identify important alternative explanations of oocyte donation and subtle complexities in attitudes. At present, these criticisms apply more to the outcome measurements used to assess components of the TPB, rather than the TPB model itself. Moreover, previous research has failed to incorporate ethnic diversity in the theoretical models.

### ***5.5.1 Limitations***

There are some limitations to this study. First, as the sample is small, non-representative and recruited through the snowballing technique, generalisations of the findings from this study need to be used with caution. Second, fertile and infertile participants were recruited. However, in order to avoid the difficulties involved in recruiting heterogeneous samples, the infertile participants data were analysed separately as case studies and remained faithful to IPA traditions.

### ***7.5.2 Reflective commentary***

As a researcher, I have been listening to the lived experiences, attitudes and feelings of the participants in this study and trying not to impose my own attitudes and feelings on their narratives, particularly as I have positive attitudes towards oocyte donation and the recruitment of oocyte donors. As mentioned before in chapter 4, supervision and reflective thinking were two steps taken to reduce researcher bias. However, IPA recognises the importance of the role of the researcher in the research process and as Charmaz and Mitchell (1997) advised, scholarly neutrality in research should always be challenged. Instead, reflective thinking is advocated. It is likely that my social identity (i.e. young British South Asian female with no known fertility problem) constrained some of the questions asked and responses given during the interviews. For example, an infertile researcher may have asked different questions and achieved a different dynamic. However, in many ways I was quite similar to the participants in this study. Specifically, although I had more knowledge of oocyte donation than many of the participants, the interviews were a learning experience for the participants and myself. Just as the participants learnt more about oocyte donation and began to shape their attitudes and thoughts through discussion, I



too began to learn more about my own feelings and thoughts. Like many of the participants, I shared positive attitudes towards oocyte donation; however I would be unwilling to donate my own oocytes. I was able to relate to participant's ambivalence and saw some of my own paradoxical attitudes reflected in their narratives.

## **7.6 Conclusion**

This study qualitatively assessed the meaning of oocytes and oocyte donation for treatment and research among women from the general population using Interpretative Phenomenological Analysis (IPA). Interpretative Phenomenological Analysis revealed discourses and narrative accounts of oocyte donation were multifaceted and paradoxical and differed between ethnic groups. Participants used alternative and opposing frameworks to represent oocytes and oocyte donation, demonstrating ambiguity towards oocyte donation. Quantitative studies have failed to identify these complexities in women's discourses. The findings obtained in this study could be useful in enhancing the existing understanding of oocytes and oocyte donation.

Studies in this thesis have so far only assessed attitudes and intentions towards oocyte donation in attempts to gather a detailed and varied understanding of the factors that influence attitudes and intentions to donate. The next study (chapter 8) will now use this information in an intervention study designed to change intentions towards oocyte donation.

## **8. Study 5 A study of the effect of message framing on oocyte donation.**

### **8.1 Summary**

So far, studies in this thesis (studies 1 to 4) have been relatively conventional in their methodological approach to investigate women's attitudes towards oocyte donation (e.g. use of interviews and questionnaire designs). Further, none of the studies that were conducted have done any intervention work and this is also lacking in the wider oocyte donation literature (see chapter 2). So, a study was designed that addressed these limitations and offered a creative approach to oocyte donation research. Study 5 therefore examined the effect of gain and loss framed messages on women's intentions towards oocyte donation and examined whether components of the Theory of Planned Behaviour (TPB) moderated the relationship between framing and intentions to donate oocytes. A total of 406 women participated in the study (mean age = 22.0, SD=2.9). There were 211 participants in the gain condition and 195 in the loss condition. An analysis of covariance found a main effect for framing ( $F(1, 402) = 6.3; P < 0.01$ ) after controlling for existing attitudes towards oocyte donation and pre-message intentions to donate. Specifically, participants in the gain framed condition were significantly more likely to report higher post message intentions to donate oocytes than participants in the loss condition. However, no differences between gain frame and loss frame condition was observed for South East Asian participants. Further, structural equation modelling (SEM) analyses revealed lower levels of 'Perceived behavioural control' (component of the TPB) ( $\beta = -.420, P < 0.03$ ) and positive attitudes towards 'the importance of genetic ties between parent and child' ( $\beta = .70, P < 0.001$ ) were direct predictors of post message intentions in the gain (but not loss) frame condition. Findings obtained from this study indicate that oocyte donation campaigns could consider using gain framed messages in recruitment appeals and message frames could be matched to the target populations' perceived level of behavioural control.

## **8.2. Introduction**

Oocyte donation has allowed thousands of women in the UK the opportunity to give birth to children who are not genetically but biologically and socially related to them (HFEA, 2008). Unfortunately, there is an acute shortage of donated oocytes in the UK (HFEA, 1998; Murray and Golombok, 2000; Blyth and Frith, 2008). In addition, recruitment of donors is time consuming and costly. Gorill, Johnson, Patton and Burry, (2001) followed a clinic that posted a recruitment advertisement for donors over 15 months. They reported that a total of 315 women had responded to the appeal, however only 12 percent of them were finally included in the donor pool. Most of the women had voluntarily withdrawn and a minority were screened out because of medical or psychological concerns. Gorill *et al.* estimated that every donor entering the program cost the clinic nearly two thousand dollars each. Consequently, there is a need for effective health campaigns to raise awareness of the shortage of oocyte donation in an attempt to attract more donors. Moorman and Matulich (1993) argued that most health campaign studies are limited to demographic or psychological factors. Of course health campaigns need to accommodate for demographic and psychological variables, however they also need to utilise optimal strategies for increased efficiency and effectiveness. One such strategy used in persuasive health campaigns has been the framing effect.

### **8.2.1 Framing Effect**

Framing effect (discussed in detail in the introduction chapter, section 1.2.6.3) is based on the Prospect theory that predicts different preferences for equivalent outcomes that are framed either positively (as gains) or negatively (as losses) (Kahneman and Tversky, 1979, 1981). Studies have found that gain and loss framed messages can influence choices,

attitudes and behaviours differently (Kahneman and Tversky, 1981; Wilson, Purdon and Wallston, 1988; Rothman, Salovey, Antone, Keough and Martin, 1993). According to the framing effect, people avoid risks when considering gains, but prefer risks when considering losses. The characteristics of the behaviour and individual variability may also moderate the influence of the gain or loss frames (Rothman *et al.*, 1993). Loss frames have been shown to be more effective in promoting health detection behaviour, whereas gain frames have been shown to be more effective in prevention behaviour (O'Connor, Ferguson and O'Connor, 2005). Detection behaviour is perceived to be risky, so loss frames are more successful. Whereas, prevention behaviour is perceived to be safe, so gain frames are more effective because they promote certainty (Rothman and Salovey, 1997). Indeed, previous work has found prevention behaviours such as doing exercise (Robberson and Rogers, 1988) and using sunscreen (Rothman *et al.*, 1993; Detweiler, Bedell, Salovey, Pronin and Rothman, 1999) are best promoted by using the gain framed message; and detection behaviours such as screening for breast cancer (Banks, Salovey, Greener, Rothman, Moyer, Beauvais and Epel, 1995; Schneider *et al.*, 2001) and skin cancer examinations (Block and Keller, 1995) are best promoted using the loss framed message. As predicted, O'Connor *et al.* (2005) also found that loss frames were better at promoting intentions to use the male contraceptive pill than gain frame because the male contraceptive was perceived as potentially risky. However, they found that the loss frame only influenced intentions in men with positive attitudes towards the male contraceptive pill as measured by the Theory of Planned Behaviour (TPB) (Ajzen, 1985, 2002). O'Connor *et al.* also found no other TPB variable (subjective norms or perceived behavioural control) moderated the framing effect, thus indicating that in parts, the TPB could be used to explain the framing effect.

Studies have also found that individual variability may moderate the influence of the framing effect. Maule and Villejoubert (2007) argued that a major criticism of health research in framing is that it fails to account for the influence of pre-existing intentions. For example, Wong and McMurray (2002) found that smokers reacted differently to the framed messages depending on their pre-intentions towards smoking (intending to give up smoking or not). One recent study that did account for pre-intentions was Reinhardt, Marshall, Feeley and Tutzauer's (2007) investigation on the effect of loss and gain framed messages on reactions to a health campaign promoting organ donation. The gain message highlighted the benefits associated with being a potential donor, whereas in the loss condition highlighted the cost associated with not being a donor. They found a main effect for framing after controlling for pre-intentions towards organ donation; specifically participants assigned to the gain framed message reported more positive reactions to organ donation than participants assigned to the loss framed message. There are some similarities between organ donation and oocyte donation (i.e., individuals altruistically agree to donate part of themselves to help others) and there is potential that the framing effect could be applied to oocyte donation. The aims of this study were therefore to examine the effect of gain and loss framed messages on women's intentions towards oocyte donation and to examine whether components of the TPB influenced the relationship between framing and intentions to donate oocytes, in White and non-White populations.

### **8.3 Method & Materials**

#### ***8.3.1 Design and measures***

An independent design was used and the study was completed online. The research design and method of this study has been described in detail in chapter 3. However, in summary, subsections of the English translated version of the Attitudes towards oocyte donation scale

(Skoog Svanberg, Lampic, Bergh and Lundkvist, 2003a) were used to provide a baseline measurement of women's attitudes and intentions towards oocyte donation for treatment. These subsections were the components of the Theory of Planned Behaviour (TPB), specifically; Attitudes towards oocyte donation; Attitudes towards the consequences of oocyte donation; Subjective norms; Perceived behavioural control; and Intentions to donate. Further, an additional item was included that measured the perceived importance of genetic ties between parent and child. After completing the pre-measurements, participants read either a gain framed message or loss framed message and completed four questions on their attitudes and intentions to donate after message exposure (see appendix 6). The gain framed message highlighted the benefits associated with being an oocyte donor, whereas the loss framed message highlighted the cost associated with not being an oocyte donor. The framed messages were developed after reviewing a number of recent examples of successful framed messages (e.g. Reinhart *et al.*, 2007; Chang, 2007; Brunton, 2007; Lorez, 2007; O'Connor *et al.*, 2005). The respondents rated each item using a ten point scale of agreement with higher scores indicating positive attitudes.

### **8.3.3 Participants**

A total of 416 women aged between 18 to 53 years participated in the study. However, since only young women are eligible as oocyte donors (35 is the upper age limit) and there were only a handful of participants who were over the age of 35, this paper will only report the data on women aged between 18 to 35 years ( $n=406$ ). The mean age of the 406 participants was 22.0 (SD=2.9) years old. Over half of the participants were British born (63.1%) (the exact ethnicity of participants is unknown) and the remaining were South East Asians (28.6%) (mostly Malaysian) or were classified as 'others' (8.4%). As the sample was young, unsurprisingly the majority of the participants were single (72.4%) and had no

children (97.8%). Most reported no previous miscarriages (99.3%) or terminations (96.3%). Only one participant (.2%) reported an infertility diagnosis and four participants (1%) reported their partner had an infertility diagnosis.

### **8.3.2 Procedure**

This study was carried out during 2008. The study was developed online. Participants were recruited using a number of different methods which included the snowball sampling technique; using Internet social forums; and sending out an email inviting students at a local university to participate in the study. A total of four contacts of South East Asian ethnic background were used to collect data using the snowballing technique. A list of all emails from snowballing and university's students and a list of Internet social forums websites were drawn up and emails or websites were allocated to either a gain frame or loss frame condition. Attempts were made to divide the list of emails and websites as neutrally as possible. On the whole, South Asian and South East Asian cultures are relatively similar regarding matters relating to childbearing and family. For example, both cultures are collective, pronatalist and emphasise the social importance of childbearing for women (e.g. Bhopal, 1998; Liamputtong and Nakssok, 2002; Bharadwaj, 2003; Liamputtong, Yimyan, Parisunyakul, Baosoung and Sansiriphun, 2004; Culley, Rapport, Katbamna, Johnson and Hudson, 2004). The recruitment of South East Asians for opportunistic reasons was therefore not considered to be problematic. Ethical approval was granted by the university ethics committee.

## **8.4 Results**

### **8.4.1 Socio-Demographic Comparisons**

There were 211 participants in the gain condition and 195 in the loss condition. There were no significant differences between the gain and loss participants on age ( $t(404) = 1.41$ ;  $P > 0.05$ ), ethnicity ( $\chi^2 = 1.6$ , d.f. = 2,  $P > 0.05$ ), parity ( $\chi^2 = .2$ , d.f. = 1,  $P > 0.05$ ), marital status ( $\chi^2 = 1.9$ , d.f. = 1,  $P > 0.05$ ), miscarriages ( $\chi^2 = .4$ , d.f. = 1,  $P > 0.05$ ) or terminations ( $\chi^2 = .01$ , d.f. = 1,  $P > 0.05$ ) (see Table 8.4.1). British and South East Asian participants were also compared on socio-demographic characteristics. Analyses revealed that with an exception of socio-economic status ( $\chi^2 = 14.34$ , d.f. = 2,  $P < 0.001$ ) (South East Asian were more likely to report unemployment), there were no significant differences between British and South East Asian participants.

### **8.4.2 Components of the TPB**

Results revealed that the data were normally distributed and did not violate the assumptions of multivariate statistics. Consequently, women's scores on the components of the TPB were taken before exposure to the framed messages. Results obtained revealed that the majority of the participants from the gain and loss conditions did not report an intention to donate their oocytes and there were no significant differences between the framing groups ( $t = -.47$ , d.f. = 404;  $P > 0.05$ ). Participants in the gain and loss condition also did not differ in their 'attitudes towards oocyte donation' ( $t = -.16$ , d.f. = 404;  $P > 0.05$ ); 'attitudes towards the consequences of oocyte donation' ( $t = 1.17$ , d.f. = 404;  $P > 0.05$ ); 'perceived behavioural control' ( $t = -1.0$ , d.f. = 404;  $P > 0.05$ ) and 'subjective norms' ( $t = -1.38$ , d.f. = 404;  $P > 0.01$ ).



Table 8.4.1: Socio-demographic variables

Variable	Gain Condition	Loss Condition
<i>n</i>	211	195
Mean Age	22.2 (SD = 3.1)	21.8 (SD = 2.7)
<b>Ethnicity (%)</b>		
British	61.1%	65.1%
Asian	28.9%	28.2%
Other	10.0%	6.7%
Nulliparous	98.1%	97.4%
<b>Marital Status</b>		
(% Single)	75.4%	69.2%
<b>Miscarriages</b>		
(% with at least one miscarriage)	0.5%	1.0%
<b>Terminations</b>		
(% with at least one past termination)	3.8%	3.6%

T-test analyses were also conducted with respondents from British and South East Asian backgrounds. Results obtained revealed that 'perceived behavioural control' was the only component of the TPB that distinguished between British and South East Asians ( $t = 2.58$ ; d.f. = 370;  $P < 0.01$ ). South East Asian women ( $M = 7.0$ ,  $SD = 2.7$ ) were significantly more likely to report lower levels of 'perceived behavioural control' than British women ( $M = 7.7$ ,  $SD = 2.3$ ). No ethnic differences were found relating to pre-intentions and other components of the TPB.

### 8.4.3 Framing Effect

Participants in the gain framed condition ( $M = 23.7$ ,  $SD = 6.7$ ) were significantly more likely to report higher post message intentions to donate oocytes for treatment after exposure to the gain framed message in comparison to participants in the loss condition ( $M = 22.1$ ,  $SD = 6.5$ ) ( $t = -2.47$ ,  $d.f. = 404$ ;  $P < 0.01$ ) (see figure 8.4.1). As shown before, there were no significant differences between gain and loss frame participants in their pre-intentions to donate oocytes ( $t = -.47$ ,  $d.f. = 404$ ;  $P > 0.05$ ). In addition, an analysis of covariance (ANCOVA) also found a main effect for framing ( $F(1, 402) = 6.3$ ;  $P < 0.01$ ) after controlling for existing attitudes towards oocyte donation and pre-intentions to donate.

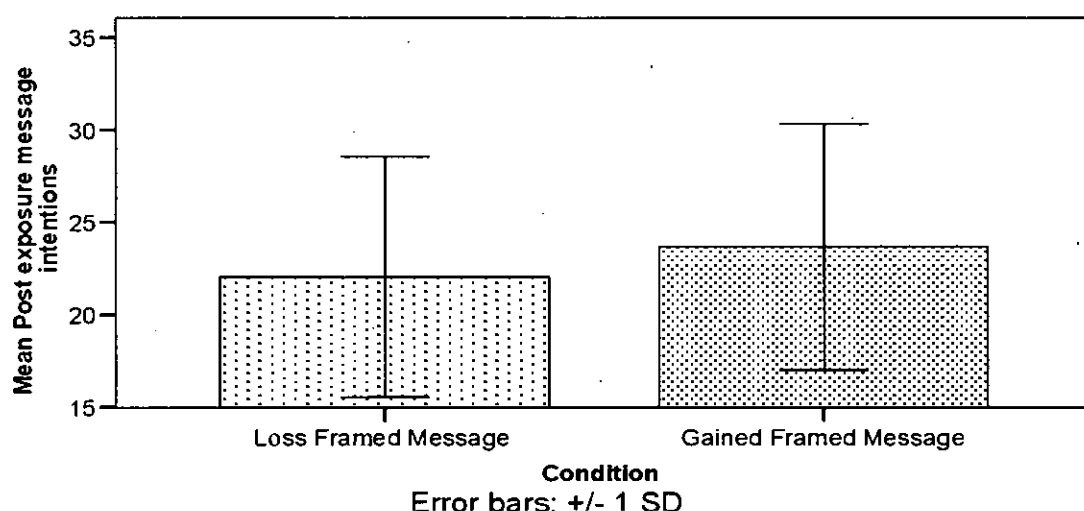


Figure 8.4.1: Post message intentions for loss and gain framed conditions

However, separate group analyses were also run for South East Asian and British participants. Results obtained demonstrated that White participants were significantly more likely to report higher post-intentions to donate oocytes after exposure to the gain framed message ( $M = 27.2$ ,  $SD = 6.2$ ) than participants in the loss frame ( $M = 22.1$ ,  $SD = 6.8$ ), even after controlling for existing attitudes towards oocyte donation and pre-intentions

( $F(1, 252) = 8.1$ ;  $P < 0.050$ ). However, ANCOVA did not find a main effect for framing South East Asian participants when analysed separately ( $F(1, 112) = .12$ ;  $P > 0.05$ ). So, South East Asian participants did not score any differently in the gain ( $M = 22.7$ ,  $SD = 6.7$ ) or loss conditions ( $M = 22.4$ ).

#### ***8.4.4 Structural Equation Modelling Summary***

Structural equation modelling (SEM) analyses were conducted for the gain and loss conditions in attempts to establish how the different framed messages influenced post message intentions. Separate SEM analyses on White and South East Asian groups were not conducted because of the small number of South East Asian participants, which would not allow for SEM testing (Bryne, 2001). Tables 8.4.2 and 8.4.3 present the correlation matrix between variables for the gain and loss frame condition to aid interpretations of the SEM analyses and Figure 8.4.2 and Figure 8.4.3 presents the structural equation model for gain frame effect and loss frame effect, respectively.

#### 8.4.4.1 Gain frames

Table 8.4.2: Correlation matrix between variables

	Post- Intentions	Pre- Intentions	Terminations	Subjective	PBC	Genetic
Post- Intentions	-					
Pre- Intentions	-.051	-				
Terminations	.043	.240**	-			
Subjective	.017	.467**	.205**	-		
PBC	-.162**	.186**	.114*	.294**	-	
Genetic	.263**	-.120*	.030	-.107	.188**	-

Note: \*  $P < 0.05$ ; \*\*  $P < 0.01$ ; Post-Intentions = Intentions to donate after message exposure; Pre-Intentions = Intentions to donate before message exposure; Subjective = Subjective Norms; PBC = Perceived Behavioural Control; Genetic = Attitudes towards the importance of genetic ties.

According to the gain condition model, past 'terminations' ( $\beta = 2.07$ ,  $P < 0.01$ ) and high levels of 'Subjective norms' ( $\beta = .50$ ,  $P < 0.001$ ) predicted pre-intentions to donate. Pre-intentions were also related to post-message intentions ( $\beta = .58$ ,  $P < 0.05$ ) (and post-intentions also predicted pre-intentions,  $\beta = -.07$ ,  $P < 0.05$ ). Further, lower levels of 'Perceived behavioural control' ( $\beta = -.420$ ,  $P < 0.03$ ) and positive attitudes towards 'the importance of genetic ties between parent and child' ( $\beta = .70$ ,  $P < 0.001$ ) were also direct predictors of post-intentions. The covariances between 'terminations'; 'Subjective norms'; 'Perceived behavioural control' and attitudes towards 'Importance of genetic ties' are all reported in figure 8.4.2.

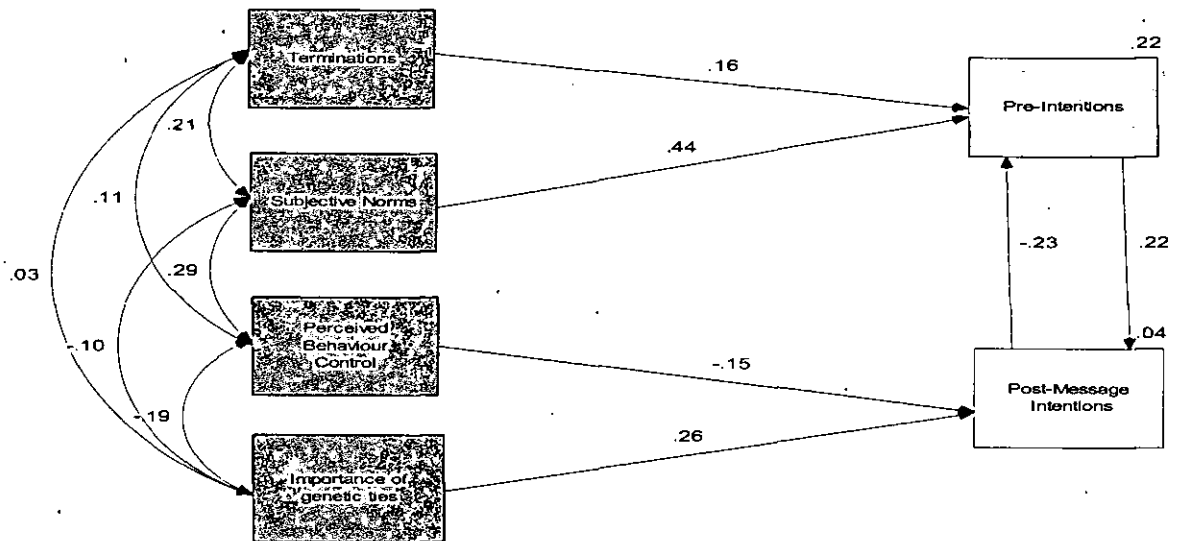


Figure 8.4.2: Gain framed model

Note: Squares represent observed variables. Values are standardised coefficients; all coefficients are significant at  $p < 0.05$ . Importance of genetic ties represents attitudes towards the importance of genetic ties between parent and child; Pre-intentions represents intentions to donate oocytes before exposure to gain framed message; Post-message intentions represents intentions to donate oocytes after exposure to gain framed message; Subjective norms, perceived behavioural control and pre-intentions are components of the Theory of Planned Behaviour.

#### 8.4.4.2 Loss frames

Below is a table that shows the correlation matrix of all the variables in the SEM analyses to aid interpretation of SEM model.

Table 8.4.3: Correlation matrix between variables

	Post-Intentions	Pre-Intentions	Terminations	Subjective	PBC	Genetic
Post-Intentions	-					
Pre-Intentions	.024	-				
Terminations	.173**	.202**	-			
Subjective	-.003	.536**	.110	-		
PBC	.093	.224**	-.017	.420**	-	
Genetic	.075	-.104	.044	-.179**	-.049	-

Note: \*  $P < 0.05$ ; \*\*  $P < 0.01$ ; Post-Intentions = Intentions to donate after message exposure; Pre-Intentions = Intentions to donate before message exposure; Subjective = Subjective Norms; PBC = Perceived Behavioural Control; Genetic = Attitudes towards the importance of genetic ties.

The loss framed SEM model however revealed a different picture. Specifically, according to the loss model, past 'terminations' ( $\beta = 2.27$ ,  $P < 0.01$ ) and high levels of 'Subjective norms' ( $\beta = .58$ ,  $P < 0.001$ ) remained significant predictors of pre-intentions. However, there no longer remained any significant association between pre-intentions ( $\beta = .11$ ,  $P > 0.05$ ) and post-message intentions ( $\beta = -0.1$ ,  $P > 0.05$ ). Further, 'Perceived behavioural control' ( $\beta = .22$ ,  $P > 0.05$ ) and attitudes towards 'the importance of genetic ties between parent and child' ( $\beta = .23$ ,  $P > 0.05$ ) were also no longer predictors of post-intentions. As can be seen from Figure 8.2 and 8.3, a notable change in the structural model is the direction of the association between 'Perceived behavioural control' and post-message intentions. In the gain frame, lower levels of 'perceived behavioural control' predicted post-intentions to donate. Whereas, in the loss frame, there was no significant relationship and the direction of the association was positive. So unlike the gain condition, the loss frames did not change low scores into positive scores. Once again, the covariances between variables are all reported in figure 8.4.3.

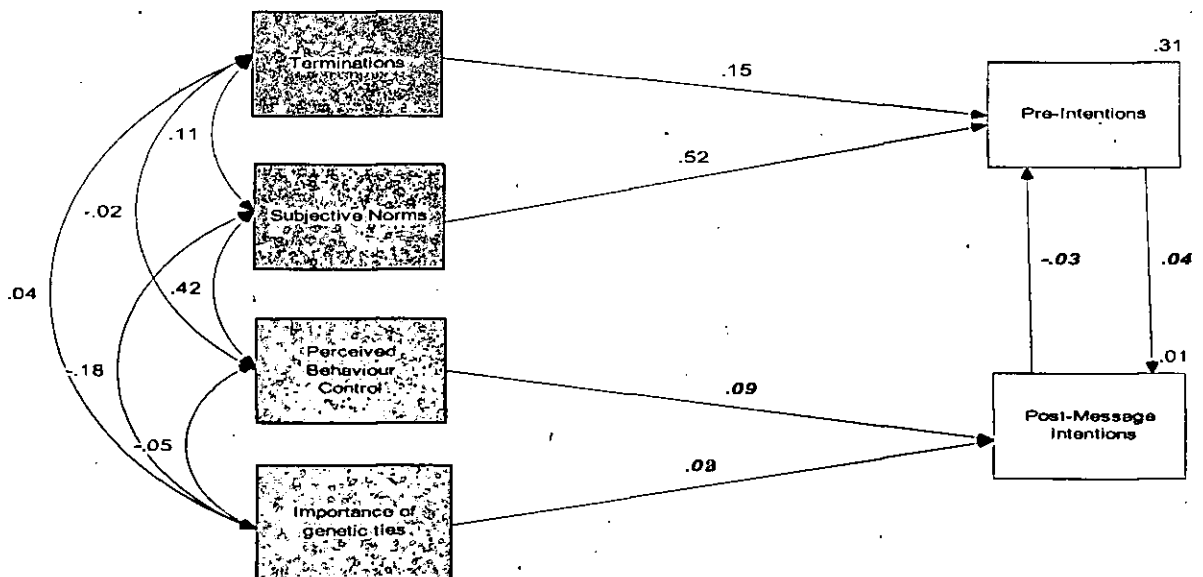


Figure 8.4.3: Loss Framed Model

Note: Squares represent observed variables. Values are standardised coefficients; Standard co-efficient in bold and italic represent non-significant interactions; Importance of genetic ties represents attitudes towards the importance of genetic ties between parent and child; Pre-intentions represents intentions to donate oocytes before exposure to loss framed message; Post-message intentions represents intentions to donate oocytes after exposure to loss framed message; Subjective norms, perceived behavioural control and pre-intentions are components of the Theory of Planned Behaviour.

The model was well-fitting across the two different framing conditions. The overall fit of the model was good, with  $\chi^2 = 6.71$  (d.f. = 6,  $P = .35$ ) and fit indices of 0.99 for GFI, 0.99 for CFI, 0.97 for NFI, and 0.02 for RMSEA. Models including other socio-demographic variables and other components of the TPB did not yield good fits.

## **8.5 Discussion**

### **8.5.1 Summary of findings**

The findings obtained from this study support previous research that has examined the effect of gain and loss framed messages (e.g. Rothman *et al.*, 1993; Banks *et al.*, 1995; Block and Keller, 1995; Rothman and Salovey, 1997; Robberson and Rogers, 1988; Kuhberger, 1998; Detweiler *et al.*, 1999; Bannon and Schwartz, 2006; Sherman, Mann and Updegraff, 2006; De Martino *et al.* 2006; Hadden and Delhomme, 2006; Chang, 2007; Lorez, 2007; Maule and Villejoubert, 2007). Results demonstrated that the gain framed message was more persuasive in promoting oocyte donation than loss framed, even after controlling for existing attitudes and intentions, and these results are consistent with Reinhart *et al.*'s (2007) work on organ donation. However, results also revealed that the framing effect was only observed in White participants and not South East Asians. Likewise, Brunton (2007) found Māori and Pacific Island women in New Zealand were not motivated by either the gain or loss framed messages for breast cancer screening compared to European New Zealand women. Brunton had also conducted some focus groups and found that Māori and Pacific Island perceived the framed messages (gain and loss) as too individualistic, which failed to recognise their collectivistic culture, and these reasons marked the messages ineffectiveness. It is possible that the same might apply here and the

content of the messages failed to make a connection with South East Asian women because the messages did not recognise important ethnic differences.

Structural equation modelling (SEM) was also utilised and results revealed that past terminations and subjective norms (a component of the TPB) significantly predicted pre-intentions (before frame messages exposure) to donate oocytes. However, perceived behavioural control (another component of the TPB) directly influenced the framing effect. Specifically, perceived behavioural control was inversely related to post intentions in the gain (but not loss) frame condition. In other words, the gain frames were more influential in promoting post-intentions in participants with low levels of behavioural control. Positive attitudes towards the importance of genetic ties between parent and child and pre-intentions to donate also significantly predicted post-message exposure intentions in the gain frame but not loss frame. Subjective norms and terminations only predicted pre-intentions and had no direct influence on post intentions.

#### ***8.5.2 The theory of planned behaviour, importance of genetic ties and the framing effect***

The direct influence of perceived behavioural control on frames and post-intentions contradicts some reports from previous studies. Perceived behavioural control refers to people's appraisals of their ability to perform a behaviour and according to Ajzen (1998), it is comparable to self efficacy. Sherman *et al.* (2006) examined the mediating role of self efficacy to the relationship between framing and dental flossing behaviour. Through SEM analyses they found that *higher* levels of perceived efficacy influenced flossing intentions and behaviour in the framing conditions. Further, Webb and Sheeran (2006) conducted a meta-analysis on studies that have used an intervention designs (but not framing effect) to test the theoretical tenets of the TPB. They found that perceived behavioural control



moderated the intention-behaviour relationship. They found that participants with *high* levels of perceived behavioural control were more likely to report changes in their intentions post-intervention than participants with low levels of behavioural control. However, the opposite effect was observed in this study. Our study found that lower scores of perceived behavioural control significantly predicted post intentions to donate in the gain condition. That is, highlighting the benefits of being an oocyte donor may be more effective with women with low levels of behavioural control. It is possible that in the context of oocyte donation, low behavioural control is associated with persuadable behavioural intentions. Thus, it may be possible to influence women with low control through messages that highlight the personal and social benefits of being an oocyte donor, because perhaps these messages empower them. However, women with existing high reproductive control may be more difficult to persuade because the decision to donate is theirs to make and they have decided not to become oocyte donors.

However, the ability of low perceived behavioural control to predict intentions is consistent with the tenets of the TPB and concurs with some other investigations too. For example, Bunce and Birdi (1998) applied the TPB to predict young doctors (with low levels of perceived behavioural control) and experienced doctors (with high levels of perceived behavioural control) intentions to request an autopsy. They found perceived behavioural control predicted intentions to request an autopsy among young doctors but not experienced doctors. The authors suggested that in circumstances of low behavioural control, the TPB is most effective, but in circumstances of high behavioural control, the TPB collapses to the TRA.

The SEM analyses also revealed that positive attitudes towards the importance of genetic ties between parent and child significantly predicted post message exposure intentions in

the gain (but not loss) condition. These results are interesting but conflict with other data (within this thesis too) that have suggested that negative attitudes towards the importance of genetic ties is associated with donation intentions in the general population (Skoog-Svanberg, Lampic, Bergh and Lundkvist, 2003a; Purewal and van den Akker, 2006; study 2 chapter 5) and oocyte donor populations (e.g. Weil, Cornet, Sibony, Mandelbaum and Salat-Baroux, 1994; Ahuja, Simons, Mostyn and Bowne-Simpkins, 1998; Beatens, Devroey, Camus, van Steirteghen and Ponjaert-Kristoffers, 2000; Byrd, Siderbotham and Lieberman, 2002; Kirkman, 2003; Winter and Daniluk, 2004). It is possible that participants were mistaking genetic for biologic connections. For example, Boden, Hunt and Williams (2002) noted that many people have limited understanding of genetics. So, participants may have confused genetic ties with biologic-gestational ties (which are achieved through oocyte donation). Thus, for those participants who value biological ties, the gain framed message may have elevated these beliefs to such an extent that they became significant predictors of post-message intentions. Further, although analysis of covariance supported the framing effect even after controlling for pre-intentions, the SEM found that pre-intentions predicted post-intentions. According to the SEM (but not analysis of covariance statistics) gain framed messages may not necessarily change the intentions of women who do not report pre-intentions towards oocyte donation. However, clearly more research is needed to explain these contradictions and to recognise the underlying psychological mechanisms that operate in the framing effect in relation to the TPB and attitudes towards genetic ties in oocyte donation.

### ***8.5.3 Reference point***

Unlike this study, most of the literature on framing has focused on the individual reading the message (reference point 'self'). However, in appeals such as environmental context,

organ donation (Reinhart *et al.*, 2007) and now oocyte donation, the appeals have focused on self and others who might benefit or suffer as a consequence of a certain behaviour. Loro (2007) investigated whether reference point (self or self-other) moderated the effectiveness of gain and loss frames in relation to recycling or prevention of a sexually transmitted disease. She found reference point interacted with framing. Specifically, loss frames were more effective when they emphasised the message recipient (self) and gain frames were more effective when they emphasised the benefits of a behaviour towards self and others (self-other). Loro argued that persuasion 'is greatest when a resource match occurs' (pp 1016). So, persuasion attempts targeting self-others are less likely to be as involving, distinct and accessible than self referencing messages. Further, loss frames may require greater cognitive effort to process than gain frames, because loss frames focus on harmful consequences, and may need more mental resources to process the message and to activate relevant coping strategies. Therefore, self-other reference message should be more persuasive when paired with less resource-demanding frame (i.e., gain). Whereas, self reference should be paired with a more cognitively demanding message (i.e., loss). Indeed, Loro and Reinhart *et al.*'s (2007) work have found partial support for the reference point interaction, as both studies found gain frame was more successful than loss framing in changing attitudes towards donation in messages that were self-other oriented.

#### **8.5.4 Limitations**

There are some limitations to this study which must be acknowledged. First, no control group (i.e. participants who were exposed to no messages) was used in this study, although the gain and loss condition work as a control group against the other. However, with no independent control group, it is only possible to assert that gain frame messages are more effective than loss frame messages but it cannot be asserted that the framing effect was

observed. Further, the sample of this study was not randomised into groups, although every care was taken to minimise any potential bias in group allocation. Third, the post-message intention scale included four items and achieved a Cronbach alpha of 0.64. Nevertheless, one item on the scale does not refer explicitly to intentions (specifically, “reading this message has influenced my feelings about egg donation?”). Finally, this study only measured intentions to perform a behaviour and not actual behaviour. Therefore, there is scope for further improvement in future research. For example, a control group could be used to eliminate any doubts whether the framing effect has been observed or not and participants should be randomly allocated to research groups to minimise potential sample bias. Further, the post-message intention scale should be validated to ensure all items are measuring intentions. Ideally, behaviour should be used to measure the framing effect and not just intentions. Thus, more research is needed to explore whether interventions based upon the framing principle can actually affect behaviour and recruitment of oocyte donors. One possible method of doing this through an Internet study is providing all participants with a contact address (e.g. a link to a website about oocyte donation) and measuring whether the participants used the link provided.

### ***8.5. 5 Implications***

Despite the limitations identified in this study, findings obtained from this study suggest that campaigns could consider using gain framed messages and not loss framed, in an attempt to persuade more effectively. However, results also found that South East Asian participants did not respond positively to the gain frame condition compared to White women. Past research has suggested that the framing effect is possible with women from non-White ethnic backgrounds if they account for important ethnic and cultural differences (Brunton, 2007). Furthermore, message frames could be matched to the target populations’

perceived level of behavioural control. For example, this study found South East Asian women were significantly more likely to report lower levels of perceived behavioural control than White women, however there were no significant differences in pre-message intentions. Moreover, Purewal and van den Akker (2006) also found that South Asian women were significantly more likely to report low levels of perceived behavioural control and intentions to donate oocytes in comparison to White British women. Therefore, campaign targeting South East Asian and South Asian women to promote oocyte donation could consider employing the gain framed message, which accommodates their cultural and ethnic beliefs. These results are poignant as there is an acute shortage of donated oocytes from women in Asian communities in Britain (Murray and Golombok, 2000).

In addition, these results provide some support for the application of the framing effect in pro-social behaviour and highlight the possibility of reference point as a potential moderator. However, this study did not examine the interaction between reference point and framing and more research is needed in this area. From a theoretical perspective, these findings could potentially highlight the importance of perceived behavioural control on post message exposure intentions. Further, women with low levels of behavioural control made up a large group in the 'possible' donor group in previous studies (e.g. Skoog-Svanberg *et al.*, 2003a; Purewal and van den Akker, 2006; study 2 chapter 5 and study 3 chapter 6), suggesting these could be converted using targeted framing campaigns.

## **8.6 Conclusion**

In conclusion, the gain framed message appears to be more successful at changing intentions towards oocyte donation than loss framed messages among women with low levels of perceived behavioural control and positive attitudes towards the importance of

genetic ties between parent and child. All the five studies that were conducted in this thesis have now been reported. The next chapter will integrate the findings from all studies and integrates the results to past research and theory in attempts to develop a coherent and theoretical based explanation of the findings.

## **9. General Conclusion and Discussion**

This thesis examined women's attitudes and intentions towards oocyte donation. It adopted a Theory of Planned Behaviour (TPB) approach and incorporated a multi-paradigm (idiographic and nomothetic) triangulation method to measure women's attitudes towards oocyte donation and their reasons for parenthood. Specifically, this thesis evaluated the psychological determinants of oocyte donation intentions and parenthood; investigated the link between oocyte donation intentions and parenthood; assessed the influences of socio-demographic characteristics and lived experiences in determining the importance of a genetic link in families created through third party conception; used components of the TPB to determine the differential attitudes and beliefs in potential oocyte donation for treatment and research; evaluated the utility of framing messages in women's willingness to donate their oocytes; and used a diversity of methodological traditions. A total of five empirical investigations (studies 1 – 5) and one systematic review were designed and carried out to fulfil the aims of this thesis, because of the diversity of research methodologies and questions generated, brief summaries of the findings from each study are presented below.

### **9.1. Summaries of findings**

#### ***9.1.1. Systematic Review on Oocyte Donation: Attitudes, Motivation and Experiences of Donors***

This systematic review integrated the research findings of 61 studies regarding the psychological determinants of (potential) oocyte donation and extrapolated women's experiences of donation. The data syntheses revealed distinct differences between patient

and non-patient donors on demographic characteristics, motives for donation, issues relating to disclosure and attitudes towards the resultant offspring. However, perceptions of the importance of motherhood and unimportance of genetic ties between parent and child appeared to be important factors underpinning the motivation for donation, irrespective of donor groups. Studies which have examined the experiences of donors report positive experiences of oocyte donation. Although, a number of methodological limitations were identified in the systematic review relating to the research literature, the research aims and methodologies of the reviewed studies were relatively varied and diverse, which ensured key issues are addressed in the research literature.

#### ***9.1.2 Study 1: The Socio-cultural and biological meaning of parenthood***

This study qualitatively assessed the meaning of parenthood of individuals of different ages, gender, ethnic backgrounds and parity. The results of the Interpretative Phenomenological Analysis revealed a number of common ideologies about parenthood. First, the commonest theme was the interpretation of parents as selfless beings. Second, parenting was believed to be '*Fulfilling*'. Third, most participants demonstrated ambivalence and confusion towards a '*Biological Drive*' as a reason for parenthood. Fourth, all participants discussed the importance of a '*Joint Decision*' in deciding to have a child. Finally, a theme of 'being prepared for parenthood' was also evident. Further, four themes also emerged which represented that attitudes towards parenthood were also shaped by age, parity, ethnicity and gender-related life experiences. On the whole, the social and personal importance of genetic parenthood was evident throughout the data and across all different groups of participants.



### ***9.1.3 Study 2: A quantitative study of attitudes and demographic factors influencing women's intentions to donate oocytes***

This study evaluated the application of the TPB in intentions to donate oocytes and examined the link between oocyte donation intentions and reasons for parenthood using Structural Equation Modelling (SEM). Approximately one third of women under 35 reported an intention to donate their oocytes, whereas, only 13% of women over 35 reported an intention. SEM analyses on women under the age of 35 indicated positive attitudes and high levels of subjective norms (components of the TPB) and endorsement of less conventional reasons for parenthood predicted intentions to donate. Age, education and attitudes towards the importance of a genetic link between parent and child indirectly influenced the intention to donate oocytes. The results indicate that young women reporting an intention to donate had less conventional perceptions of parenthood, which coincided with their positive beliefs about the importance of parenthood and children. Further, data analyses on a small group of former oocyte donors revealed that they reported positive attitudes towards the removal of anonymity and disclosure of genetic origin to the child. They also believed having children is the most important thing in life, but did not believe in the importance of a genetic link between parent and child. The utility of some theoretical components and beliefs about parenthood predicting potential donation behaviour for fertility treatment has therefore been demonstrated.

### ***9.1.4 Study 3: A quantitative study of attitudes and intentions to donate oocytes for research***

This study investigated women's attitudes towards oocyte donation for research and their intentions to donate using components of the TPB through SEM analyses. A new sample was recruited and it was found that approximately one third of women from the general

population would consider donating their oocytes for research in the future. SEM analyses revealed that younger age and some components of the TPB; high levels of subjective norms and positive attitudes towards oocyte donation were predictive of intentions to donate. Attitude towards parenthood or other socio-demographic variables were not associated with the intention to donate for research. The majority of women reporting an intention to donate oocytes for research also reported no preference towards donating their oocytes towards research or fertility treatment. The theoretical predictions of potential donation behaviour for research were therefore replicated to those found for treatment (study 2).

#### ***9.1.5 Study 4: A qualitative study of perceptions of oocyte donation.***

This qualitative study assessed the meaning of oocytes and oocyte donation for treatment and research using IPA. This study also qualitatively assessed the application of components of the TPB in intentions and attitudes towards oocyte donation. Four interrelated super-ordinate themes were identified. First, participants presented two competing representations of oocytes. They represent oocytes as biological matter and as powerful entities that were integral to women's ability to conceive and to her femininity. Second, data revealed a dualist conflict in women's explanations of oocyte donation. Oocyte donation was portrayed as an acceptable means to achieve a family and a fine example of altruism and humanity. However, oocyte donation was also perceived to be a behaviour which was considered to be abnormal and personally unacceptable. Women maintained the paradox because of the perceived importance of motherhood, which was responsible for the social acceptability of oocyte donation. Whereas, the perceived importance of a genetic link between parent and child underpinned the personal unacceptability of oocyte donation. Finally, social support and reproductive control

justified the decision not to donate among South Asian participants but not White participants. The dual stance or potential conflicting interpretations of oocytes and oocyte donation brings back the importance of a genetic link (and the importance of motherhood for donation to others) and also determined the strength rather than weakness of the freedom of choice not to donate particularly amongst South Asian participants.

#### ***9.1.6 Study 5: A study of the effect of message framing on oocyte donation***

This study examined the effect of gain and loss framed messages on women's intentions towards oocyte donation and examined whether components of the TPB moderated the relationship between framing and intentions to donate oocytes. Participants in the gain framed condition were significantly more likely to report higher post message intentions to donate oocytes after exposure to the framed message than participants in the loss condition. However, a number of group differences were found. For example, participants from South East Asia did not score significantly differently in the gain and loss frame condition. Further, the gain framed messages was more effective with participants with low levels of perceived behavioural control, positive attitudes towards the importance of genetic ties between parent and child and pre-message intentions to donate. The data demonstrated that it might be possible to change a woman's intentions following effective interventions.

### **9.2 Integrating the Thesis**

The aims of this thesis were to explore the psychological determinants of oocyte donation intentions and to investigate the link between oocyte donation intentions and parenthood using a theoretical framework and adopting different research methodologies. The collated findings from the five studies have shown that some components of the TPB (as measured in this thesis) have the potential to provide some insight into the psychological and social

determinants of oocyte donation, however the model does not account for all of the variance in intentions to donate. Oocyte donation intentions are best accounted for by a diverse dimension of influences, such as attitudes towards parenthood and importance of genetic ties and demographic variables. Positive attitudes towards oocyte donation and social support from significant others are key in the decision to donate. The empirical studies confirmed the results from the systematic review and found that perceptions of the importance of mother/parenthood and genetic ties between parent and child are influencing factors in the decision to donate for treatment and are outside the realm of the TPB model. Some socio-demographic variables also directly and others indirectly influenced intentions and attitudes towards oocyte donation for treatment and research, perceptions of parenthood and importance of a genetic link between parent and child. One of the research plans of this thesis was to delineate ethnic differences relating to oocyte donation in an attempt to explain the meagre availability of non-White donated oocytes, despite an equal demand. Interestingly in studies where candidates were actively recruited (studies 1, 4 and 5), a balanced ethnic mix was studied and results revealed distinct ethnic differences. For example, the importance of genetic parenthood and the influencing role of social support and behavioural control were more salient variables amongst South Asian populations than White. Further, South East Asians were more likely to resist attempts to change intentions towards oocyte donation compared to White participants. However, in studies 2 and 3, which relied on volunteers to essentially recruit themselves, there was a low number of non-White participants, which handicapped any attempts to understand key ethnic differences relating to attitudes towards oocyte donation for treatment and research.

The following sections will discuss important themes that have emerged from this thesis which relate to the research aims and draw upon past research and theory to interpret the findings. First, the overall findings will be interpreted with specific references made to key

issues and work in the oocyte donation research literature (9.2.1). Second, the relationship between perceptions of parenthood and oocyte donation will be addressed (9.2.2). Third, the application of components of the TPB to oocyte donation will be discussed (9.2.3). Fourth, limitations of this thesis will be highlighted in attempts to ground any inferences made about the findings obtained (9.3). Finally, recommendations for clinical and research practice also will be presented (9.4).

### ***9.2.1 Oocyte donation for treatment and research***

Overall, the questionnaire studies on oocyte donation for treatment and research (studies 2 & 3) and qualitative study (study 4) on perceptions of oocyte donation have repeatedly found attitudes towards donation are on the whole favourable, and this is consistent with previous research that has examined general population's attitudes towards oocyte donation (e.g. Lessor, Reitz, Balmaceda, and Asch, 1990; Karem, Thompson, Hamilton, and Templeton, 1995; Westlander, Janson, Tågnfors, and Bergh, 1998; Urdapilleta, Chillik, and Fernández, 2001; Chliaoutakis, 2002; Chliaoutakis, Koukouli, and Papadakaki, 2002; Skoog-Svanberg, Lampic, Bergh, and Lundkvist, 2003a, b; Isikoglu, Senol, Berkkanoglu, Ozgur, Donmez and Stones-Abbasi, 2006; Purewal and van den Akker, 2006; Brett, Sacranie, Thomas and Rajkhowa, 2008). The demographic profile of potential donors for oocyte donation for treatment and research were quite similar and broadly reflected the characteristics of potential oocyte donors identified by Skoog-Svanberg *et al.* (2003) in Sweden. However, potential donors differed greatly from the potential donors in Purewal's and van den Akker's (2006) study. This may be because Purewal and van den Akker had a smaller number of women reporting an intention to donate ( $n = 5$  out of 101) and recruited a younger (mean age 22 years) and more ethnically diverse (55% were South Asians) sample. Furthermore, the demographic profiles of potential donors for treatment and research in studies 2 & 3 were also consistent with the

profiles of volunteer donors for treatment in the UK and Europe (e.g. Power, Baber, Abdalla, Kirkland, Leonard and Studd, 1990; Söderström-Anttila, 1995; Kirkland, Power, Burton, Baber, Studd and Abdalla, 1992; Kan, Abdalla, Ogunyemi, Korca and Latache, 1998) and commercial donors in the US (e.g. Schover, Collins, Quigley, Blankstein and Kanoti, 1991; Klock, Braverman and Rausch, 1998; Klock, Stout and Davidson, 1999, 2003; Kalfoglou and Geller, 2000 a,b; Kalfoglou and Gittelsohn, 2000). The similarities between actual donors and potential donors identified by this thesis are therefore reassuring and suggest the findings could have real potential to translate into clinical practice.

Since, donor anonymity was abolished in 2005, there has been some serious concern that this new law would result in a further decline in donor availability (e.g. Pennings, 2005). Previous reports have found that a significant minority of former oocyte donors would not donate their oocytes again as identifiable donors (Craft *et al.*, 2005; Frith, Blyth and Farrand, 2007). Study 2 found that the majority of women who reported an intention to donate their oocytes were generally negative towards the disclosure of genetic origin to the child despite reporting an intention to donate. Further, the qualitative study (study 4) also found that legislation regarding donor anonymity did not influence participant's decision to donate because their unwillingness stemmed from the perceived importance of parenthood. As has been discussed in the introduction, there has been a steady decline in donor availability since 2000 (HFEA, 2007) and this was before donor anonymity was abolished in 2005. Blyth and Frith (2008) argued that this new legislation was not exclusively responsible for the declining numbers of oocyte donors and this thesis does provide some support to Blyth's and Frith's arguments. Data from study 4 showed that women would not donate because of the perceived importance of parenthood and because they did not consider oocyte donation to be a normative behaviour. However, participants in study 4 also revealed that they were more likely to perceive oocyte donation for research as more

acceptable than donation for treatment, because this ensured any genetic children they had remained in their biologic family.

There were a number of differences and similarities between women's attitudes towards oocyte donation for treatment and for research. For example, Study 2 assessed attitudes towards oocyte donation for treatment and reported that unconventional reasons for parenthood and beliefs in the unimportance of genetic ties were important predictors in donation intentions and this is consistent with previous research (e.g. Kalfoglou and Gittelsohn, 2000; Byrd, Siderbotham and Lieberman, 2002; Kirkman, 2003; Skoog Svanberg *et al.*, 2003; Winter and Daniluk, 2004; Purewal and van den Akker, 2006; Yee, Hitkari and Greenblatt, 2007). However, these attitudes did not feature in oocyte donation for research (study 3). As oocyte donation for research does not result in a child, it is possible that attitudes towards parenthood and the importance of genetic ties are not relevant. Further, study 4 also found most women would prefer oocyte donation for research opposed to treatment, because there would be no resultant and genetically related child through donation. However, important similarities between attitudes towards oocyte donation for treatment and research were observed and related to the predictive utility of components of the TPB. Attitudes towards oocyte donation and subjective norms predicted intentions to donate for treatment and research, highlighting the usefulness of the TPB model in explaining oocyte donation.

In summary, this section has shown that the findings obtained for oocyte donation for treatment and research were generally consistent with previous work in the oocyte donation literature. Data also revealed that attitudes towards parenthood are key in determining intentions to donate oocytes for treatment among women from the general population. The following section will discuss parenthood themes that have emerged.

### **9.2.2 Attitudes towards Parenthood**

Academics have often reported that postmodern perceptions of parenthood and children remain rooted in Victorian patriarchal ideology, where the expectations are to live in biologic, genetic, nuclear, heterosexual families and parenthood is idealised and aspired (c.g. Oakley, 1980; Ussher, 1989; Ulrich and Weatherall, 2000; Gillespie, 2000; van den Akker, 2001; Choi *et al.*, 2005; Miller, 2007; Hadfield *et al.*, 2007). This thesis, confirmed the strength of these traditional ideologies. The quantitative investigation of women's attitudes towards oocyte donation for treatment (study 2) and the qualitative studies (studies 1 & 4) all found that for most participants, parenthood is romanticised, essential in their lives, and provides them with a social identity, thus substantiating other work. Further, study 4 also confirmed perceptions that parts of women's bodies (i.e. oocytes) have been medicalised or reduced to cell/matter status (e.g. Ehrenreich and English 1979; Oakley, 1980, 1984; Oinas, 1998; Brown and Webster, 2004; Earle and Letherby, 2007).

This thesis has found that for many participants the desire to live in biologic and genetic families is deeply rooted and that donating oocytes and allowing another couple to raise their genetic children was deemed to be unnatural. There are however thousands of other women across the world who willingly donate their oocytes. It was important therefore to understand and specify any link between oocyte donation and [unconventional] parenthood perceptions. The data presented in study 2 demonstrated that women who were more willing to report an intention to donate oocytes were also more likely to endorse less conventional reasons for parenthood. Results also showed that women who were willing to donate were also more likely to minimise the importance of a genetic link between parent and child than those women who were unwilling or unsure (although the link between



unimportance of genetic ties and intentions to donate was not substantiated in the framing study-5). Likewise, previous research with oocyte donors has reported that donors do not rate a genetic link between parent and child as important (Weil *et al.*, 1994; Snowdon, 1994; Ahuja *et al.*, 1998; Beatens *et al.*, 2000; Byrd *et al.*, 2002; Kirkman, 2003; Winter and Daniluk, 2004). It is possible therefore that for oocyte donors, it is easier to relinquish their oocytes because they matter little to them and their perceptions of parenthood are not restricted to the traditional ideology of genetic and biologic family formations.

Results obtained from studies 1 and 4 also suggest that the lack of South Asian oocyte donors in the UK (Murray and Golombok, 2000) may be attributable to cultural differences in the importance of parenthood. Genetic parenthood for South Asians was perceived to be mandatory and of critical social and personal importance in their strong pronatalist society, which has also been observed by other researchers (Bhopal, 1998; Inhorn and van Balen, 2002; Apte, Mali, Navle and Revle, 2004; Nene, Coyaji and Apte, 2005; Widge, 2005). South Asian participants were more likely to report they would not have social support in the decision to donate their oocytes. Oocyte donation would not be considered socially acceptable within the South Asian communities because it involves the relinquishment of socially valued genetic material (Culley, Rapport, Katbamna, Johnson and Hudson, 2004). Results from study 5 also revealed that women from South East Asian backgrounds still continued to report unwillingness to donate oocytes, although White participants reported a change in intentions after exposure to the framed messages. Although there is no past literature that has examined South East Asian women's attitudes towards oocyte donation, it is likely that South East Asian and South Asian women share a similar cultural backdrop that prohibits oocyte donation. However, it is also possible that the framed messages failed to capture intrinsic cultural and ethnic characteristics relating to oocyte donation and parenthood, which resulted in the ineffectiveness of the messages.

On the whole these results suggest that the perceived importance of parenthood and genetic ties between parent and child are important determinants of the willingness to donate oocytes. For many, oocyte donation is not possible because their perceptions of parenthood remain distinctly within the dominant cultural norm. For women whose perceptions of parenthood challenge dominant norms, emphasise social parenthood and minimise the importance of genetic ties, oocyte donation is a possibility. The results from this thesis also demonstrated that apart from perceptions of parenthood and genetic ties, there are a number of other psychological constructs (as identified by the TPB) which also determine intentions to donate oocytes.

### ***9.2.3 Theory of Planned Behaviour***

Overall, many of the hypotheses derived from the TPB were supported in this thesis and were consistent with previous work by Skoog-Svanberg *et al.* (2003) and Purewal and van den Akker (2006), who have been the only investigators that have applied a psychological health model to oocyte donation and used the same instrument. These results are also consistent with the wider donation literature which has applied the TPB to account for the variance in donation behaviour (e.g. Giles and Cairns, 1995; Armitage and Conner, 2001; Kent, 2002; Giles, McClenahan, Cairns and Mallet, 2004; Lemmens, Abraham, Hoekstra, Ruiter, De Kort, Brug, and Schaalma, 2005; Mayrhofer-Reinhartshuber, Fitzgerald, Benetka and Fitzgerald, 2006; Bresnahan *et al.*, 2007; Ferguson, France, Abraham, Ditto and Sheeran, 2007; Smith and McSweeney, 2007; France, France and Himawan, 2008). However, the majority of these studies have developed and used an extended version of the TPB and incorporated other variables such as self efficacy, self-identity and moral norms in the TPB model (e.g. Armitage and Conner, 2001; Giles *et al.*, 2004; France *et al.*, 2008).

These constructs have been included in the model because past research has found the original TPB model is inadequate in fully accounting for the social and cognitive determinants of donation behaviour. Indeed, discussing charitable giving, Smith and McSweeney (2007) argued that had they only considered the original TPB model, they would have obtained 'an impoverished picture of the role of normative influences in charitable giving' (pp. 380). The inclusion of additional variables in the TPB does not conflict with the theoretical premise of the model because according to Ajzen (1991), the TPB is 'open to the inclusion of additional predictors if it can be shown that they capture a significant proportion of the variance in intention or behaviour' (pp. 199). It is assumed that the additional predictors would interact with components of the TPB to account for the greater variance (Conner and Armitage, 1998). However, SEM analyses in study 2 found that perceptions of parenthood directly influenced the intentions to donate for treatment independent of and without any interactions with TPB components. Demographic variables such as age and education however did indirectly influence intentions through interacting with the TPB. In study 3, components of the TPB and age accounted for intentions to donate for research. Thus, these results demonstrate partial support for the application of components of the TPB in oocyte donation intentions. Additional shortcomings of the TPB identified in this thesis were related to intentions to donate and perceived behavioural control components, which will be discussed below.

#### *9.2.3.1 Intentions to donate*

Results obtained found approximately one third of women surveyed would consider donating their oocytes for treatment or research. Although encouraging, it is unlikely that 30% of the population sampled will actually proceed to donate their oocytes. The TPB (Conner and Armitage, 1998; Shceran, 2002) and donation literature (Ferguson, 1996; Radecki and Jaccard, 1999; Bresnahan *et al.*, 2007) on intention-behaviour relationships

suggests that an intention reported by participants under research conditions does not often translate into actual behaviours. For example, Yoshikawa (1999) found 44% of respondents surveyed reported an intention to become an organ donor, however only 7% had finally completed an application form for a donor card. According to Bagozzi (1992) components of the TPB are *necessary*, but not *sufficient* in determining behavioural intentions. For example, Bresnahan *et al.* (2007) found that despite having positive attitudes towards organ donation and positive behavioural intentions, the majority of their participants refused to complete an organ donation application. There is a need therefore to understand what is responsible for the poor attitudes/intention to behaviour association. The qualitative study (study 4 reported in chapter 7) found that women had ambivalent feelings towards oocytes and oocyte donation. Ambivalence refers to the simultaneous possession of positive and negative feelings towards an object (Gardner, 1987). Although, all women had positive attitudes towards oocyte donation (consistent with the quantitative work), oocyte donation was not considered to be a normative behaviour. This may explain why research has consistently found that women from the general populations in principle report positive attitudes towards oocyte donation, but do not in practice, report an intention to donate (e.g. Karem *et al.*, 1995; Chliaoutakis, 2002; Chliaoutakis, Koukouli and Papadakaki, 2002; Skoog-Svanberg *et al.*, 2003a, 2003b; Purcwal and van den Akker, 2006; Brett *et al.*, 2008) and also accounts for the shortage of oocyte donors in the UK (HFEA, 1998; Murray and Golombok, 2000; Blyth and Frith, 2008). These results could be interpreted within the TPB literature on the moderating role of ambivalence in the intention-behaviour relationship (Conner and Sparks, 2002). Cooke and Sheeran (2004) conducted a meta-analysis and found support for the moderating role of ambivalence. That is, participants with high levels of ambivalence demonstrated significantly weaker attitude-behaviour associations than participants with low levels of ambivalence. One team of investigators suggested that the high levels of ambivalence reduced the intention-behaviour

predictive relationship because participant's attitudes are in conflict (Sparks, Conner, James, Shepherd and Povey, 2001). Rapport (2003) did find themes of ambivalence among her patient donors and this thesis found similar themes among women from the general population. However, most studies have failed to identify dualist conflict in attitudes towards oocyte donation and no association had been made that links ambivalence and intentions to donate oocytes.

#### *9.2.3.2 Perceived behavioural control*

Results from the SEM analyses in studies 2 & 3 revealed that perceived behavioural control did not predict intentions towards oocyte donation for treatment or research (however it did predict post message exposure intentions in the framing study, chapter 8).

It is possible therefore that the Theory of Reasoned Action (TRA) could *in part* be sufficient in explaining oocyte donation behaviour. Ajzen (1985; 2002) developed the TPB model to explain behaviours which are *not* under the control of the individual. (Sheeran, Trafimow, Finlay and Norman, 2002). Whereas, the TRA model, accounts for behaviours which *are* under the control of the individual (Fishbein and Ajzen, 1975; Ajzen and Fishbein, 1980; Finlay, Trafimow and Moroi, 1999; Sheeran *et al.*, 2003). Ajzen and Madden (1986, pp. 459-460) argued that perceived behavioural control becomes irrelevant for predictions of behaviours which are under the volitional control of an individual and the TPB reduces back to the TRA. The majority of the samples for studies 2 & 3 consisted of White females (over 90%) and Puréwal and van den Akker (2006) found that White women are more likely to report greater perceived behavioural control in making the decision to donate their oocytes than women from other ethnic groups. This is also consistent with the qualitative investigation (study 4), which found White participants also reported greater behavioural control and that this does not influence their donation intentions. It is possible that for White women, the decision to become an oocyte donor

may not hinge on their perceived behavioural control (as they already have high levels of reproductive control) and their attitudes and subjective norms account for more variance in the decision to donate oocytes, this could potentially support the adoption of TRA. For example, this is consistent with some previous works on donation behaviour which have adopted the TRA or found the TRA to be more appropriate in accounting for behavioural intentions. For example, one investigation found perceived behavioural control predicted intentions to become an organ donor among Asian but not American participants (Bresnahan *et al.*, 2007). Bresnahan *et al.* suggested the TRA provided a better explanation of behavioural intentions for American participants because the decision to donate was under their control. Whereas the TPB was more appropriate for Asian populations, because the decision to donate was not under their complete control and the same may also be true for oocyte donation. Whereas, Bagozzi, Lee and van Loo (2001) and Breitkopf (2006) justified the decision to apply the TRA instead of the TPB to explain intentions to donate bone marrow because they believed the 'decision to donate is under volitional control' (Bagozzi *et al.*, 2001, pp 31). However, there are plenty of studies in the donation literature which have favoured the TPB model (e.g. Giles and Cairns, 1995; Armitage and Conner, 2001; Giles *et al.*, 2004; Smith and McSweeney, 2007). In addition, support for the TRA must be made with strong caution as the item used to assess the perceived behavioural control construct was a single item measurement, which did not include self-efficacy in its conceptualisation (this will be discussed in more detail in the limitation section 9.3). Further, if all participants had been informed of the medical process involved in oocyte donation, it is possible that perceived behavioural control may have become more important.

Overall, some components of the TPB have provided potential explanation of the determinants of oocyte donation. Results appear to suggest that women's ambivalence

towards oocyte donation may account for the shortage in oocyte donors in the UK. However, all of the findings that have been discussed throughout this chapter need to be addressed within the contexts of the limitations of these studies.

### 9.3 Limitations

There are some shortcomings to this thesis which should be addressed because they set legitimate constraints on the inferences and generalisability of the findings obtained. First, the aims of this thesis were to examine general populations' attitudes towards oocyte donation and the results cannot be generalised to patient or non-patient donors. Also, like many other TPB studies, this thesis relied on self-reports of participant's intentions to donate oocytes and did not measure actual behaviour (Armitage and Conner, 2001) and as mentioned before, the associations between intention and behaviour are not always strong (Ferguson, 1996; Conner and Armitage, 1998; Radecki and Jaccard, 1999; Sheeran, 2002; Bresnahan *et al.*, 2007). Further, the item used to measure intentions is also problematic. Intentions under the TPB model refer to forming a decision to act. However, the intention item used in this thesis asked participants whether they see themselves 'donating eggs at some point in the future?'. Future research should consider measuring actual behaviour through recruiting volunteer oocyte donors and thus measuring the relationship between attitudes-intentions-behaviour more fully, or using a better measurement for intentions, such as implementation intentions.

The Attitudes towards oocyte donation questionnaire developed by Skoog-Svanberg *et al.* (2003) was used to measure attitudes and intentions to donate oocytes and assessed the application of components of the TPB to oocyte donation. Although, the questionnaire has been successfully replicated three times (Purewal and van den Akker, 2006; study 2 and adapted version of the questionnaire for oocyte donation for research – study 3) the

questionnaire does have some limitations which should be acknowledged (these have also been acknowledged in the limitation sections of the individual studies). First, the scale only had one item measuring intentions, perceived behavioural control and subjective norms, which means that the items lack the sophistication to accurately measure these particular psychological constructs. However, Armitage and Conner (2001) found that the majority of the literature on TPB has used single item measures for components of the TPB. Second, although most sub-sections of the questionnaire had demonstrated good internal consistency, some sub-sections did not meet the highest levels of agreement. Third, all of the components used to measure the TPB did not adhere to Ajzen's (2002) principles of Target, Action, Context, and Time (TACT), compatibility and specificity and generality. Fourth, components of the TPB deviated from the original model. For example, subjective norms was conceptualised as 'social support' as opposed to 'social pressure'. This may not necessarily be a limitation as it is likely there would be no known social pressures for women to donate under voluntarily donation, which is the underlying premise of the voluntary donation system. However, studies 2, 3 and 5 have all found that subjective norms (under the social support definition) was an influencing factor in women's willingness to donate oocytes. These results are revealing and could suggest that this revised model of subjective norms may be more useful within oocyte donation. Fifth, the 'attitudes towards oocyte donation' and the 'consequence of oocyte donation' (attitudes tenet of the TPB) subscales included some items which did not explicitly refer to oocyte donation, although these subscales achieved good Cronbach alpha's (.81 and .70, respectively).

Sixth, there are also some concerns regarding the perceived behavioural control construct used in this thesis. Perceived behavioural control should refer to people's confidence in their ability to perform a given behaviour and Ajzen (1991) likened this to self-efficacy.



Unfortunately, the Attitudes towards oocyte donation scale only included a one item subscale for perceived behavioural control and this item did not refer to self-efficacy beliefs. This is a serious limitation in light of research which has found that perceived behavioural control measurement is a better predictor of intentions when they include some components of self efficacy (e.g. Schaalma, Kok and Peters, 1993; Armitage and Conner, 1999a). Kraft, Rise, Sutton and Roysamb (2005) used confirmatory factor analysis and found that self efficacy (and perceived difficulty) is inter-related to perceived behavioural control. It is possible that the omission of self-efficacy may have been responsible for perceived behavioural control's poor predictive power. Further, participants were not fully informed about the oocyte donation procedure and with more information of the procedure, perceived behavioural control may have become more predictive of intentions. Knowledge may also have been an independent predictor of oocyte donation. However, in spite of these limitations, this questionnaire represents real progression in oocyte donation research through its ability to apply a theoretical perspective towards oocyte donation intentions, and hopefully resulting in the identities of predictor variables. Theory based research in oocyte donation is in its infancy and this thesis represents an early attempt to apply theory to explain donation intentions. Future work should now use the findings obtained from this thesis and improve on the Attitudes towards oocyte donation scale to eliminate some of the shortcomings identified. For example, subscales, particularly single items should be removed and replaced by scales which conform to TACT and compatibility principles and are reliable and internally consistent.

The Reasons for Parenthood scale was not validated to ascertain whether the outcome tool was a valid and reliable measure of conventional attitudes towards parenthood. The scale does have face validity because the author (of the Reasons for Parenthood) has confirmed that the scale does assess conventional reasons for wanting to have children (Langdridge,

2008, personal correspondence) and findings from study 1 support this. However, as no formal validity assessment was performed, a cautionary approach should be taken and future work recommended. One possible method would be to measure the Reasons for Parenthood's concurrent validity by comparing it to another measure of attitudes towards parenthood.

There are also some biases regarding the recruitment of participants. First, studies 2, 3 and 4 recruited participants over the Internet and the sample obtained may not be representative of the general population. This is mainly because Internet recruited samples tend to be better educated and more affluent than samples recruited through paper and pencil methods (Wilson and Laskey, 2003). However, in many Western countries the gap between online and offline populations is disappearing (Fricker and Schonlau, 2002) and it is estimated that the majority of Western populations regularly use the Internet (UCLA Centre for Communication, 2003). Further, the Internet is increasingly being used for health information and advice (Nicholas, Huntington, Gunter, Withey and Russell, 2003). Nevertheless, generalisation of the findings obtained in these studies must be made with caution. Second, the majority of the participants recruited for the questionnaire studies were mainly White (over 90% of the sample were White for both studies). Therefore, the data from these studies cannot also be used to generalise to non-White populations. However, these figures are representative of the UK general population, where 91% of residents living in England describe their ethnicity as White (Census, 2001). In addition, demographic data on the website visitors was also requested from the HFEA, NGDT and NAPS to ascertain whether these figures were representative of the web-user populations. Unfortunately, none of these organisations collected data on their website visitors. Therefore, it still remains unclear whether these figures are representative or whether non-White participants chose not to complete these questionnaires or did not visit these

websites. Nevertheless, the lack of non-White participants means no adequate explanation can be provided to account for the significantly low numbers of non-White oocyte donors. Third, there appear to be systematic differences between the samples of participants in the five studies. For example, studies 2 and 3 recruited participants from websites relating to reproductive health (e.g., HFEA, NGDT and NAPS) and consequently they reported a higher intention to donate. However, the samples from studies 4 (recruited using snowball technique) and 5 (mostly university students) did not report high levels of intentions. Thus, comparison between studies must also been made with some caution, which acknowledges the systematic difference between the samples used. To avoid some of these biases, it may have been more appropriate to recruit participants in studies 1, 4 and 5 using the same Internet websites used for studies 2 and 3. However, this may have resulted in a further lack of non-White women participating in these studies. Therefore, future research could avoid using the Internet to recruit participants and use standard methods such as pen and pencil format through mailing systems.

There are some limitations associated with the qualitative studies (1 & 4) in this thesis. First, the findings from these studies cannot be easily generalised as they are based on the life experiences of small and non-representative samples of participants recruited through snowballing. Also, the IPA method has also been applied flexibly within study 1, in order to fulfil the aims of this thesis, utilise the Reasons for Parenthood scale fully, and remain methodologically and theoretically consistent throughout the thesis. Nevertheless, this study could have been conducted in a manner which adhered to IPA principles more faithfully. For example, through only recruiting a homogeneous sample and certainly any future attempt should do this to avoid methodological flaws in its design and investigate attitudes towards parenthood more rigorously.

There are some methodological shortcomings to study 5 too which must be addressed. First, no control group was used, therefore it is only possible to assert that gain frame messages are more effective than loss frame messages but it cannot be asserted that the framing effect was observed. Further, the sample of this study was not randomised into groups. Future research should use a control group and randomly allocate participants to research condition to improve on these methodological flaws. However, the data obtained in these studies do have some important implications for research and clinical practice.

#### **9.4 General recommendations**

The findings from this thesis have theoretical and applied consequences. First, the applications of theoretical models in oocyte donation research are in its infancy and clearly more research is needed to clarify the inconsistencies reported in this thesis (e.g. perceived behavioural control to predict intentions to donate). Although the TPB has been a promising model in relation to oocyte donation, other psychological models should also be applied to find the best model that accounts for the greatest amount of variance in donation behaviour. Further, this thesis focused on women from the general population. Future research could explore whether patient and non-patient donors share similar attitudes towards oocyte donation and parenthood. These results could be meaningful in understanding whether subjective experiences (such as experiencing a fertility problem) shape perceptions of oocyte donation and parenthood. The effect of message framing has also been applied to oocyte donation; however there is a lack of intervention studies within the oocyte donation literature. More research is needed that adopts different research methodologies to oocyte donation in attempts to provide accurate descriptions and explanations of oocyte donation behaviour.

Second, this thesis has implications for clinical practice; in particular it has the potential to tailor clinical service provision regarding the recruitment of oocyte donors. Fishbein and Ajzen (1975) argued that understanding beliefs and attitudes through the TPB are important because it is through targeting these underlying beliefs and attitudes; that it is possible to change them (attitudes and intentions) and thus behaviours. Indeed, Hardeman, Johnston, Johnston, Bonetti, Wareham and Kinmonth (2002) conducted a systematic review of studies that have used the TPB to design intervention studies and found half of the studies reported the interventions were effective in promoting changes in intentions and two-thirds in changing behaviours. Unfortunately, the effect sizes were very small and there were also only a small number of studies reviewed ( $n = 24$ ). Nevertheless, the results from this thesis have indicated that oocyte donation is best accounted for by a diverse dimension of influences (demographic, attitudes, subjective norms and reasons for parenthood). Therefore, recruitment appeals could consider targeting these multidimensional factors.

Donor recruitment is expensive and time consuming (Gorrill *et al.*, 2001) and any successful campaign to recruit non-patient oocyte donors depends on using a variety of strategies to promote awareness and willingness towards oocyte donation. For example, based upon some components of the TPB, recruitment appeals could aim to strengthen positive attitudes that support oocyte donation and normalise the behaviour. Results from the qualitative study (study 4) demonstrated that oocyte donation was not perceived to be a 'normal' behaviour and women demonstrated ambivalence towards oocyte donation and donors. Therefore, recruiting clinics may consider developing strategies which normalises the behaviour and reduces the levels of ambivalence. Data has also revealed that age and education are significant predictors of oocyte donation and this may be useful in identifying potential donors. Further, the importance of children and less conventional

perceptions of parenthood could also be taken into account. Many existing appeals already “adorn their advertisements with images of plump babies and appeal to the joys of ‘helping’ infertile couples” (Almeling, 2007: pp. 326) and data obtained here suggest this is a correct strategy. Recruiting clinics could also aim to strengthen attitudes relating to the positive consequences of oocyte donation; strengthen the normative belief that support oocyte donation; or increase the motivation to comply with existing norms to help childless couples or scientific progress. Finally, findings also suggest that the framing effect could be utilised to change intentions of those populations with low levels of perceived behavioural control, such as women from non-White ethnic backgrounds. For women with high levels of perceived behavioural control, the framing effect may have limited impact and resources would probably be better spent elsewhere.

## 9.5 Conclusion

The aims of this thesis were to explore the psychological determinants of oocyte donation intentions and to investigate the link between oocyte donation intentions and parenthood using components of the Theory of Planned Behaviour (TPB). A diversity of methodologies were used to ensure a thorough understanding of the issues were addressed. Results revealed that oocyte donation intention is best accounted for by a diverse dimension of factors, which include attitudes, perceptions of parenthood and demographic variables. Some theoretical components of the TPB were supported; in particular positive attitudes towards oocyte donation and subjective norms demonstrated a direct influence on the potential decision to donate oocytes for treatment and research. However, the role of perceived behavioural control in intentions to donate remains uncertain. Perceptions of the importance of parenthood and genetic ties between parent and child are key in determining [un]willingness to donate oocytes for treatment. Socio-demographic variables also directly or indirectly influence intentions to donate for treatment or research. There are several limitations to this thesis which set legitimate constraints on the generalisability of the findings obtained, however the results of this thesis have some important implications for research and clinical practice.

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## Appendix 1: Topic guide for study 1

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### Interview Topic Guide

#### Demographic Details

- Participant's age, gender and ethnic background.
  
- Do you have any children?  
↓  
If so, how many?
  
- Have you had any failed pregnancies?  
↓  
If so, how many?
  
- Do you have a partner?  
↓  
If so, what are the living arrangements with your partner?
  
- What is the highest level qualification you hold?
  
- Do you work?  
↓  
If so, what is your job title?

#### Reasons for Parenthood (for people with children)

- I'm going to read you a list of reasons for having children. I would like you to listen to each one individually and after each reason tell me how this reason related to your own decision to have children. For example, you may say this is one of the reasons why I decided to have children because.... Or, you may say I did not have children for this reason because..?

↓

**Fulfilment:** Raising a child would be fulfilling

In what way would it be fulfilling?

Why is that important to you?

↓  
**Please partner:** My partner would be pleased

Why would it please your partner?

Why is that so important for you?

↓  
**Make family:** I feel it would make us a family

In what way would having a child make you a family?

What is your notion of a 'family'?

How important is it for you to achieve your perception of an 'ideal family'?

↓  
**Part of both of us:** It would be something that is part of both of us

Why is having a child that is genetically related to you and your partner so important to you?

What impact do you think it would have on you to have a child that is genetically related to both of you?

What if you couldn't have a child that is part of you and your partner (e.g. if your partner is infertile)? How would this impact on you?

↓  
**Good home:** I would give a child a good home

In what way do you think you could give a child a good home?

Why is this so important for you?

↓  
**Bio-drive:** Biological drive

In what ways do you think your biological drive influences your decision to have a child?

What makes this important to you?

- Ok, could you please look at these cards? These cards have the reasons for parenthood printed on them. Could you please rank these reasons in a hierarchical order showing

me which reason **you considered to be the most important in deciding to have a child?** Starting with the most important reason for parenthood at the top and least important at the bottom.

- Are there any other reasons why you decided to have child/children?

↓

If so, what are these reasons?

- What factors do you think determined these reasons?
- Ok, I am going to read you out a list of reasons for not wanting to have children. Now I want you to think about the reasons why you may **not** have wanted to have children or perhaps you may have had some doubts about having children because of these reasons. I am going to once again go through each reason individually and I want you to tell me if this reason would have been a reason why you may **not** have decided to have children. For example, you may say if I didn't want to have a child, I may have thought this reason because....

↓

**Other things:** I think there are other important things in life

What are the other things in your life that are important to you?

Why are they important?

In what ways would having a child interfere with other important things in your life?

↓

**Restrict freedom:** A child would restrict my freedom to do the things I enjoy

In what ways do you think having a child would restrict your freedom?

Why is this important to you?

↓

**Partner's wishes:** Because my partner does not want a child

Why doesn't your partner want to have children?

Why is this important for you?



**Career:** Having a child would interfere with my career

In what ways would having a child interfere with your career?

What makes this so important to you?



**Over population:** Concern with over population

Tell me more about your decision not to have children because of your concerns about over-population?

Why is this so important to you?

- Ok, could you please look at these cards? These cards have the reasons for not wanting to have children printed on them. Could you please rank these reasons in a hierarchical order showing me which reason **you considered to be the most important if you considered not to have a child?** Starting with the most important reason for not wanting a child at the top and least important at the bottom.
- In what way do you think your views on parenthood are different and similar to your parents?



Why do you think they are similar/different?

- Any other relevant observation the participants would like to make or issues they would like to raise.



## **Appendix 2 Topic guide for study 4**

### **Topic Guide**

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#### **Demographic Details**

- Participant's age, gender and ethnic background.
  
- Do you have any children? Are these naturally conceived/ ART/ Adoption etc?  
↓  
If so, how many?  
  
Do you suffer from infertility problem?
  
- Have you had any failed pregnancies?  
↓  
If so, how many?
  
- Do you have a partner?  
↓  
If so, what are the living arrangements with your partner?
  
- What is the highest level qualification you hold?
  
- Do you work?  
↓  
If so, what is your job title?

---

#### **Introduction**

- Brief introduction to the purpose of interview, the overall aims of this study and discuss the interview procedure.

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#### **Discuss oocyte donation in general**

- Ask participant what they know of oocyte donation for treatment and research (as a patient and non-patient).
  
- Description and explanation of HFEA agreement to allow women to able to donate their eggs for research purposes or fertility treatment, either as a non-patient donor or as a patient donor for subsidised fertility treatment. Ask participant what they think about this and how it makes them feel.

---

**Discuss perception of an oocyte**

- Do you consider an egg as a cell or potential life form?
- What factors do you think have shaped your perceptions – Religion or Science?

---

**Discuss attitudes towards oocyte donation**

- Tell me what do you think of egg donation?
- How do you think you would feel if you were the recipient of egg donation?
- Some people believe if a couple can't have children naturally, they shouldn't have children at all. What do you think?
- Some people believe egg donation for research is a good way to help contribute to science. What do you think?
- What type of research would you agree to donate your eggs for?

---

**Discuss perceived consequences of oocyte donation**

- If you considered donating your eggs for treatment. How would you feel about helping a couple that is unable to have children by other means.
- Would you be happy that your genes were being passed on?
- Do you think you would have made a contribution to your fellow man.?
- Let's say you agreed to donate for research. Would you be happy that your donation may one day help to find a cure for diseases and illnesses?
- Would you be glad you will not have a child from donated eggs?
- Would you feel as though you had made a contribution to your fellow man?
- Would you want information regarding the outcome of the research?

---

**Discuss motive for oocyte donation**

- Tell me why you would or would not consider donating your eggs?
- Why do you think some women would consider donating their eggs and other women would not? What separates them?
- If you were to donate, would you have a preference towards donating your eggs to research or fertility treatment and why?

- Do you think a woman's motives for donating would be different for donating for research or donating for fertility treatment? If so, in what ways?
- Do you think some women might be motivated to donate their eggs for fertility treatment so they can have a child (i.e. it provides them with an opportunity to pass on their genes)?

---

#### **Discuss social support and behavioural control**

- Do you think important people in your life will support your decision to donate your eggs?
- In what way do you think they would be supportive or unsupportive?
- Is the decision to donate your eggs entirely up to you or not?

---

#### **Discuss Disclosure**

- Children conceived through egg donation now have a right to seek the identity of the egg donor once they reached the age of 18 years. What do you think of this?
- Do you agree or disagree and why?
- Would this effect your decision to donate your eggs for fertility treatment?
- How would you feel if your donor offspring sought you out after 18 years?
- Would you want information regarding the well-being of the child?
- Any concerns that your child may enter consanguineous relationships with your donated offspring

---

#### **Discuss importance of parenthood and children**

- Some people believe having children is the most important thing in life. What do you think?
- Do you think you could be happy in life without children?
- How important are children to you?
- If you agreed to donate your eggs to an infertile couple. How would you feel about having a genetically related child being raised by another couple?

---

#### **Discuss importance of genetic link between parent and child**

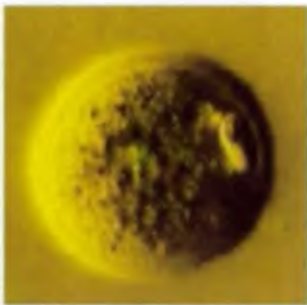
- Do you believe that genetic ties between parent and child are important?
- Stress blood ties/ cultural factors/ inheritance factors etc

- Why do you think like that?

### **Conclusion**

- Any other relevant observation the participant would like to make or issues they would like to raise about egg donation and this study.
- Summary of what has been said and the aims of study.
- Thank you for participation.
- Debrief.

**Appendix 3 Attitudes towards oocyte donation scale**



How do you feel about egg donation?

This questionnaire attempts to find out what women think about donating their oocytes or eggs to other infertile women, so that they can have a baby using your genetic material. We would like to know what you think about the following questions and statements regarding egg donation. While you answer these questions, keep in mind that they pertain to anonymous donation: the woman donating the egg and the couple receiving them never meet. However, when the children resulting from the egg donation process are grown up (18 years old) they have the right to find out the identity of the woman who acted as donor. Please respond to each question and statement. In most cases we would like you to select the box that best reflects your opinion.

<p>How old are you?</p> <p>16 ▲ 17 18 ▼</p>	<p>What is your socio-economic status?</p> <p>Unemployed ▲ Never worked Unskilled ▼</p>
<p>White ▲ South-east Asian Indian ▼</p>	<p>None ▲ GCSE A-Level ▼</p>
<p>How many children do you have?</p> <p>0 ▲ 1 2 ▼</p>	<p>How many pregnancies have you had?</p> <p>0 ▲ 1 2 ▼</p>
<p>0 ▲ 1 2 ▼</p>	<p>0 ▲ 1 2 ▼</p>
<p>How many terminations have you had?</p> <p>0 ▲ 1 2 ▼</p>	<p>Have you donated your oocytes (eggs) in the past?</p> <p>Yes No</p>
<p></p>	<p></p>

### How do you feel about having children?

Number	Question	Strongly agree	Agree somewhat	Neutral	Disagree somewhat	Strongly disagree	Cannot form an opinion
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3	Having children means losing your freedom	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4	A relationship is incomplete without children.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6	Having children is the whole purpose of life.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### How important is the genetic link between parents and children?

Number	Question	Strongly agree	Agree somewhat	Neutral	Disagree somewhat	Strongly disagree	Cannot form an opinion
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8	The genetic link between mother and child is important.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10	It is important to me that my child resembles me in terms of behaviour.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The next set of statements relate to what you think about egg donation in general.

Number	Question	Strongly agree	Agree somewhat	Neutral	Disagree somewhat	Strongly disagree	Cannot form an opinion
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12	If a friend wanted to receive donated eggs I would support her decision.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14	If you can't have children of your own, you should not have any.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Should children conceived via egg donation be informed of their genetic origin?

Number	Question	Strongly agree	Agree somewhat	Neutral	Disagree somewhat	Strongly disagree	Cannot form an opinion
16	Children conceived through egg donation should have the right to know about their genetic origin.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18	It is in the best interest of the child that he or she never be informed of his or her genetic origin.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



20	The child's relationship with his or her parents could damage if he or she learns of his or her genetic origin.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please evaluate the following statements with regard to egg donation.

Number	Question	Strongly agree	Agree somewhat	Neutral	Disagree somewhat	Strongly disagree	Cannot form an opinion
22	Women who undergo test-tube fertilization should be asked to donate their remaining eggs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23	It is better when women do not donate their eggs than when they do donate eggs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24	Advertising via media such as newspapers is a good method to recruit women for egg donation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25	The payment given to women for eggs and the payment for using the eggs should remain approximately the same.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26	The egg donor should have some relationship (family/friend) with the couple receiving the egg.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
27	There is nothing wrong with giving women an egg donation for their own donation of eggs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



After reading a recruiting advertisement in the morning paper concerning egg donations, would you?

Number	Question	Strongly agree	Agree somewhat	Neutral	Disagree somewhat	Strongly disagree	Cannot form an opinion
28	surf to the clinic's web site to get information?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30	contact the clinic with the intention of donating eggs?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Number	Question	Yes	No	Maybe/don't know			
32	Could you see yourself anonymously donating eggs at some point in the future?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>			

If you were to donate eggs, would you

Number	Question	Definitely	Probably	Indifferent	Probably not	Absolutely not
33	be happy about having a family that is not genetically related to you?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
34	be glad that perhaps your biological child might try to find you after 18 years.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
36	feel as though you had made a contribution to your fellow man.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
38	brood about it for the rest of your life.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How would the people in your life feel about you donating eggs?

Number	Question	Definitely	Probably	Indifferent	Probably not	Absolutely not
40	The important people in my life would support my decision to donate eggs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Which factor(s) would make you more likely to donate eggs?

Number	Question	Definitely	Probably	It wouldn't make a difference	Probably not	Absolutely not
42	as a donor you could be identified; that is, both the couple and the child could find out your identity?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
43	you could receive information about the child's development and health from the doctor and/or the couple?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
44	you could undergo the procedure at a hospital in your area?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
45	you could get counseling?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
46	you could speak with women who have already donated eggs?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
47	you knew the couple or knew the egg recipient's identity?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
48	you already had children of your own?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
49	you could select the couple's characteristics (e.g., race, religion)?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
50	you had more information about what it is like to be involuntarily childless?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
51	the procedure would take less time and be less painful than the current procedure?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
52	the procedure was carried	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	out at an unfamiliar hospital?					
						

## Appendix 4 Reasons for Parenthood Scale

**We would like to know why you would (or would not) want/wanted to have a child. Please select the box that best reflects your opinion. There are no right or wrong answers.**

Number	Question	Strongly disagree	Disagree	Unsure	Agree	Strongly agree	Already Have Children
58	I intend to have children at some time in the future.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**I want/wanted to have a child because**

Number	Question	Relevant	Somewhat Relevant	Unsure	Somewhat irrelevant	Irrelevant
	Raising a child would be fulfilling.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
60	My partner would be pleased if I had a child.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
61	I feel it would make us a family.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
62	It would be something that is a part of both of us.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
63	I would give a child a good home.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
64	Biological drive.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
65	To carry on our family name and tradition.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
66	My religious beliefs lead me to want a child.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
67	I want a child that is genetically a part of me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
68	To confirm my femininity.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Please select the box that best reflects your opinion for each item.**

**I do/did not want to have a child because**

Number	Question	Relevant	Somewhat Relevant	Unsure	Somewhat irrelevant	Irrelevant
--------	----------	----------	-------------------	--------	---------------------	------------

69	I think there are more important things in life.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
70	A child would restrict my freedom to do things I enjoy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
71	My partner does not want a child.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
72	Having a child would interfere with my career.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	I am concerned about over population.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
74	A child would bring too many unwanted changes into my life.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Appendix 5 The Attitudes towards oocyte donation for research scale



How do you feel about egg donation for research?

We would like to know what you think about the questions and statements regarding egg donation for research purposes. Please respond to each question and statement. Check the box that best reflects your opinion.

<b>How old are you?</b> 16 17 18	<b>What is your socio-economic status?</b> Unemployed Never worked Unskilled
<b>What is your ethnic background?</b> White South-east Asian Indian	<b>What is the highest education you achieved?</b> None GCSE A-Level
<b>How many children do you have?</b> 0 1 2	<b>How many pregnancies have you had?</b> 0 1 2
<b>How many live births have you had?</b> 0 1 2	<b>How many miscarriages have you had?</b> 0 1 2
<b>How many terminations have you had?</b> 0 1 2	<b>Have you donated your oocytes (eggs) in the past?</b> Donated for Treatment Donated for Research No
<b>What is your religion?</b> Christianity Islam Judaism	<b>What is your marital status?</b> Single Married Divorced
<b>Do you have a fertility problem?</b> Yes No Don't know	<b>Does your partner have a fertility problem?</b> Yes No Don't know

First, please give your opinion on some statements about children and parenthood.

Number	Question	Strongly agree	Agree somewhat	Neutral	Disagree somewhat	Strongly disagree	Cannot form an opinion
--------	----------	----------------	----------------	---------	-------------------	-------------------	------------------------



1	Having children is the most important thing in life.	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
2	Having children means losing your freedom.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	A child is an expression of the love shared by two people.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	A relationship is incomplete without children.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5	Self-fulfilment is difficult to attain if you have children.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6	Having children is the whole purpose of life.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**How important is the genetic link between parents and children?**

Number	Question	Strongly agree	Agree somewhat	Neutral	Disagree somewhat	Strongly disagree	Cannot form an opinion
	The genetic link between father and child is important.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8	The genetic link between mother and child is important.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9	It is important to me that my child physically resembles me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10	It is important to me that my child resembles me in terms of behaviour.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**The next set of statements relate to what you think about egg donation for research in general.**

Number	Question	Strongly agree	Agree somewhat	Neutral	Disagree somewhat	Strongly disagree	Cannot form an opinion
	If a friend/acquaintance wanted to donate eggs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	for research I would support her decision.						
12	If a friend wanted to receive treatment based on research using donated eggs I would support her decision.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13	If you are ill you should seek treatment using traditional methods(treatment not developed by stem cell research).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14	If you are ill you should not receive any treatment based on stem cell research.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15	Egg donation for research is a good way to help contribute to science.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16	I think infertile couples need eggs more than scientific research.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17	I would worry about the sort of research that might be done.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18	I see an egg as a potential life form.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19	Egg donation for research seems to be a waste of eggs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Please evaluate the following statements with regard to egg donation for research.**

Number	Question	Strongly agree	Agree somewhat	Neutral	Disagree somewhat	Strongly disagree	Cannot form an opinion
20	Women who undergo test-tube fertilization should be asked to donate their remaining eggs for research.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21	Women who want to be sterilized should first be asked if they want to donate eggs for research.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22	Advertising via media such as newspapers is a good method to recruit women for egg donation for research.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



23	Donated eggs should go to research for specific illnesses/conditions not infertile couples.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24	The egg donor should be fully informed about the purpose of the research.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25	Women who donate their eggs for research should remain anonymous to the researchers.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26	Women who donate their eggs should have a good understanding of stem cell research.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Only highly successful stem cell research teams should be able to use donated eggs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

After reading a recruiting advertisement in the morning paper concerning egg donations for research, would you?

Number	Question	Strongly agree	Agree somewhat	Neutral	Disagree somewhat	Strongly disagree	Cannot form an opinion
28	Surf the researchers or clinic's web site to get information?.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
29	Contact the researchers for more information?.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30	Contact the researchers with the intention of donating eggs for research?.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
31	Attend an information meeting?.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Number	Question	Yes	No	Maybe/Don't know
32	Could you see yourself donating eggs for research purposes at some time in the future?.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Number	Question	An Infertile Couple	Research	Both	Neither
	Would you rather donate to?.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

--	--

If you were to donate eggs for research, you would.

Number	Question	Definitely	Probably	Indifferent	Probably not	Absolutely not
34	be happy that your donation may one day help to find a cure for diseases and illnesses.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	be glad you will not have a child from donated eggs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
36	be happy that your genes will not be passed on.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
37	feel as though you had made a contribution to your fellow man.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
38	want information regarding the outcome of the research.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
39	be glad about it for the rest of your life.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
40	be content for the rest of your life.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How would the people in your life feel about you donating eggs for research?

Number	Question	Definitely	Probably	Indifferent	Probably not	Absolutely not
41	The important people in my life would support my decision to donate eggs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
42	It is entirely up to me whether or not I want to donate eggs for research.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Which factor would make you more likely to donate eggs for research?

Number	Question	Definitely	Probably	Indifferent	Probably not	Absolutely not
43	as a donor you could not be identified by the researchers?.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
44	you received substantial financial compensation (in addition to your actual cost?)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
45	you could undergo the procedure at a hospital in your area?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

46	you could get counselling?.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
47	you could speak with women who have already donated eggs for research?.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
48	you already had children of your own?.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
49	you knew the research team to whom your eggs were being donated?.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
50	you were asked at a routine gynaecological examination?.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
51	you had more information about what it is like to suffer from a disease or illness?.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
52	the treatment period prior to the donation procedure was shorter?.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
53	the procedure was carried out at an unfamiliar hospital?.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
54	you could have information about the outcome of the research?.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### I would donate my eggs for

Number	Question	Definitely	Probably	Indifferent	Probably not	Absolutely not
55	Stem cell research which aims to find a cure for diseases and illness.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
56	Research trying to improve infertility treatment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
57	Doing something that makes a difference.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## Appendix 6 Framing study outcome measurements

### How do you feel about egg donation?

This questionnaire attempts to find out what women think about donating their eggs to other infertile women, so that they can have a baby using your genetic material. We would like to know what you think about the following questions and statements regarding egg donation. While you answer these questions, keep in mind that they pertain to anonymous donation: the woman donating the egg and the couple receiving them never meet. However, when the children resulting from the egg donation process are grown up (18 years old) they have the right to find out the identity of the woman who acted as donor. Please respond to each question and statement. In most cases we would like you to select the box that best reflects your opinion.

1) How old are you?  
background?

2) What is your socio-economic status

Unemployed.  
Never worked  
Unskilled  
Semi Skilled  
Lower supervisor or technical  
Small employer or Self employed  
Immediate occupation  
Lower managerial and professional  
Higher managerial and professional

3) What is your ethnic background?

White  
South East Asian  
Indian  
Pakistani  
Bangladeshi  
Afro-Caribbean  
Chinese  
Mixed race  
Other

4) How many children do you have?

5) What is the highest education you achieved?

None  
GCSE  
A Level  
Graduate  
Post Graduate

6) How many pregnancies have you had?

7) How many live births have you had?

8) How many miscarriages have you had?

9) How many terminations have you had?

10) Have you donated your eggs in the past?

Donated for Treatment  
Donated for Research  
No

11) What is your religion?

Christianity  
Islam  
Judaism

12) What is your marital status?

Single  
Married  
Divorced

Hinduism  
Sikhism  
Buddhism  
Other Religion  
No Religion

Separated  
In Long Term Relationship

13) Do you have a fertility problem?  
problem?  
Yes  
No  
Don't Know

14) Does your partner have a fertility  
problem?  
Yes  
No  
Don't Know  
No Partner

The next set of statements relate to what you think about egg donation in general.

	Strongly agree	Agree somewhat	Neutral	Disagree somewhat	Strongly disagree	Cannot form an opinion
15. If a friend/acquaintance wanted to donate eggs I would support her decision.						
16. If a friend wanted to receive donated eggs I would support her decision.						
17. If you are infertile, adoption should be your first choice.						
18. If you can't have children of your own, you should not have any.						
18. Egg donation is a good way to help childless couples.						

If you were to donate eggs, you would..."

	Definitely	Probably	Indifferent	Probably not	Absolutely not
20. ... be happy about helping a couple that is unable to have children by other means.					
21. ... be glad that perhaps your biological child might try to find you after 18 years.					
22. ... be happy that your genes were being passed on.					
23. ... feel as though you had made a contribution to your fellow man.					
24. ... want information regarding the well-being of the child, if any.					
25. ... brood about it for the rest of your life.					
26. ... be content for the rest of your life.					

**How would the people in your life about you donating eggs?**

	Definitely	Probably	Indifferent	Probably not	Absolutely not
27. The important people in my life would support my decision to donate eggs.					
28. It is entirely up to me whether or not I want to donate eggs.					

**29. Could you see yourself donating eggs at some point in the future?**

Scores range from 1 (Disagree) to 10 (Agree).

1      2      3      4      5      6      7      8      9      10

**30. The genetic link between parent and child is important?**

Scores range from 1 (Disagree) to 10 (Agree).

1      2      3      4      5      6      7      8      9      10

### **Gain Condition Message**

It is estimated that one in seven couples will at one point in their lives experience difficulties in trying to have a child. There are approximately 30,000 people having fertility treatment each year in the UK and it is estimated that 800 babies are born from egg, sperm or embryo donation.

Egg donation is used by women who are unable to use their own eggs. For example, some women may not produce any eggs or they produce eggs of poor quality which means they are unable to get pregnant or maintain a pregnancy. Further, some women may carry an inherited genetic disease which means they cannot use their own eggs because of the fear of transmitting the disease onto the child. So, these women will rely on the donated eggs from other women to fulfill their dreams of motherhood. Unfortunately, there is an acute shortage of donated eggs in the UK. This means some women will be denied the opportunity to have children because of the lack of donated eggs.

All egg donors in the UK are altruistic donors (there is no financial reward to donate). Donors have often reported that donating their eggs to a couple is a rewarding experience. For many couples having children is the most important thing in their lives and egg donation is an excellent way to help childless couples and to contribute to human kind. Donors should be fit, healthy and under the age of 35. Donors do not have legal responsibility towards the child. The couple who receive the donated eggs will be the parents of the child. However, the child will be genetically related to the donor and the donor's genes will be passed on. Also, the child could seek out the donor once they've reached 18 years of age.

Most clinics that recruit egg donors have counsellors available to support and talk to donors and assess whether egg donation is the right choice for them. Women considering donating their eggs should think carefully if they want to become an egg donor because it is entirely up to them whether they wish to become an egg donor or not. However, informing their decisions to friends and family is also very important.

Women who receive donated eggs can increase their chances of conceiving by up to 50% and women over the age of 40 are 5 times more likely to conceive using a donor egg. It is estimated

that for every woman who donates her eggs, up to ten families can be treated. Egg donation therefore allows childless couples the opportunity to fulfill their dreams of parenthood and significantly increase their quality of life.

### **Loss Framed Message**

It is estimated that one in seven couples will at one point in their lives experience difficulties in trying to have a child. There are approximately 30,000 people having fertility treatment each year in the UK and it is estimated that 800 babies are born from egg, sperm or embryo donation.

Egg donation is used by women who are unable to use their own eggs. For example, some women may not produce any eggs or they produce eggs of poor quality which means they are unable to get pregnant or maintain a pregnancy. Further, some women may carry an inherited genetic disease which means they cannot use their own eggs because of the fear of transmitting the disease onto the child. So, these women will rely on the donated eggs from other women to fulfill their dreams of motherhood. Unfortunately, there is an acute shortage of donated eggs in the UK. This means some women will be denied the opportunity to have children because of the lack of donated eggs.

All egg donors in the UK are altruistic donors (there is no financial reward to donate). Donors have often reported that donating their eggs to a couple is a rewarding experience. For many couples having children is the most important thing in their lives and if women do not donate their eggs, they cannot help childless couples and contribute to human kind. Donors should be fit, healthy and under the age of 35. Donors do not have legal responsibility towards the child. The couple who receive the donated eggs will be the parents of the child. However, the child will be genetically related to the donor and the donor's genes will be passed on. Also, the child could seek out the donor once they've reached 18 years of age.

Most clinics that recruit egg donors have counsellors available to support and talk to donors and assess whether egg donation is the right choice for them. Women considering donating their eggs should not refrain from thinking carefully if they want to become an egg donor because it is entirely up to them whether they wish to become an egg donor or not. However, it is important not to neglect informing their decisions to friends and family.

Women who do not receive donated eggs can decrease their chances of conceiving by 50% using their own eggs and women over the age of 40 are 5 times less likely to conceive compared to women using an egg donor. It is estimated that for every woman who does not donate their eggs, up to ten families can be denied the opportunity for treatment. By not receiving egg donation, childless couples are denied the opportunity to fulfill their dreams of parenthood and significantly decrease their quality of life.

**Please select a number from 1 to 10 that best reflects your opinion for each item**

31) An egg donation message would not influence my decision to become an egg donor?

**Scores range from 1 (Disagree) to 10 (Agree).**

1      2      3      4      5      6      7      8      9      10

32) Reading an egg donation message like this makes me want to become an egg donor?

**Scores range from 1 (Disagree) to 10 (Agree).**

1      2      3      4      5      6      7      8      9      10

33) Reading this message has influenced my feelings about egg donation?

**Scores range from 1 (Disagree) to 10 (Agree).**

1      2      3      4      5      6      7      8      9      10

34) After reading this message I cannot see myself donating my eggs at some point in the future?

**Scores range from 1 (Disagree) to 10 (Agree).**

1      2      3      4      5      6      7      8      9      10

## Appendix 7.1 Systematic Review of Oocyte Donation: Investigating Attitudes, Motivations and Experiences

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# Systematic review of oocyte donation: investigating attitudes, motivations and experiences

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**BACKGROUND:** The social and psychological factors determining intentions to donate gametes are important for clinics, policy-makers and recruitment campaigns. The aims of this systematic review were therefore to integrate the research findings regarding the psychosocial determinants of oocyte donation and extrapolate women's experiences of donation.

**METHODS:** A bibliographic search of English language publications of four computerized databases was undertaken with no time restriction set for publications.

**RESULTS:** A total of 64 studies met the inclusion criteria and were included in the review. The research syntheses revealed there were distinct differences between patient and non-patient (known, commercial, volunteer and potential) donors on demographic characteristics, motives for donation, and issues relating to disclosure and attitudes towards the resultant offspring. Further, studies have found that a significant proportion of oocyte donors and women from the general population were prepared to donate their oocytes as identifiable donors. Studies which have examined the experiences of donors report positive experiences of oocyte donation. However, a number of methodological limitations relating to the oocyte donation research literature have been identified in this systematic review.

**CONCLUSION:** Differences between donor groups on a range of factors highlight the need for tailored psychosocial evaluation and counselling. The review has demonstrated that it is not useful to generalize across donor groups on various factors relating to oocyte donation.

**Key words:** oocyte donation / gamete donation / infertility / artificial reproductive technologies / systematic review

## Introduction

Since the first successful use of donated oocytes in 1984 (Lutjen et al., 1984), oocyte donation has become a common treatment option

(Pennings, 2007), resulting in good pregnancy rates and the birth of healthy babies. Demand for oocytes has been increasing across the globe, with more couples willing to use this as a means to overcome their infertility, although practices differ between countries. For



example, some Islamic countries do not permit any form of gamete donation (Inhorn, 2006), whereas, Denmark, China and Israel only permit excess oocytes that are retrieved from women undergoing IVF to be donated (Klein and Sauer, 2002). In America on the other hand, non-patient oocyte donors can be awarded monetary compensation (Patrick et al., 2001; ASRM, 2007), whereas payment in the UK is illegal.

There are distinct groups of oocyte donors: 'patient donors' (women who enter an agreement with their infertility clinic to donate a proportion of their oocytes for the treatment of others in order to receive subsidized infertility treatment) and 'non-patient donors' which include different sub-types: volunteer donors (donation without financial reward), known donors (donation to known recipients), commercial donors (donation with monetary compensation) and potential donors (women who report an intention to donate their oocytes in the research literature). Although widely practiced, there is an acute shortage of oocyte donors in the UK and globally (HFEA, 1998; Murray and Golombok, 2000; Blyth and Frith, 2008). Pennings (2005) noted that changes in legislation regarding the abolishment of donor anonymity in many European countries are responsible for the decline in donor availability, however Blyth and Frith (2008) provided compelling evidence against that. Furthermore, Daniels (2007a, b) also asserted that the recruitment of identifiable gamete donors is very much possible. The aims of this systematic review were 2-fold. First, to integrate the findings regarding the psychological determinants and motivational patterns across oocyte donation type, and second, to draw a coherent picture of women's actual experiences of donation and attitudes towards potential donation.

## Methods

### Search strategy

A bibliographic search of English language publications in four computerized data bases (PubMed, Science Direct, Swetswise and PsycInfo) was undertaken, with no restriction set for time of publication, resulting in the exclusion of eight (potentially relevant) non-English publications. The keywords 'egg/oocyte donation', 'egg/oocyte donor(s)', 'attitudes' and 'psychological/psychosocial' were used in all possible combinations. The search was augmented with references cited in primary sources, in review papers and hand-searching specialist journals.

### Selection

Inclusion criteria: only English language peer-reviewed studies that have examined the demographic characteristics, attitudes, motives and experiences of oocyte donation for treatment (where relevant) of patients donors (oocyte sharers); non-patients (known, commercial and volunteer); potential patient donors from infertile populations; and potential non-patient donors from the general populations were eligible. 'Potential donors' refers to women from general or patient populations who have not donated their oocytes nor are they on the waiting list to donate, but whose attitudes and intentions to donate have been investigated. Studies with potential donors have been included because their data provided progressive information on the social and psychological processes which may influence the decision to donate, and combined with data from actual donors, provides a comprehensive account of the research literature and the attitudes and motivations for oocyte donation.

Exclusion criteria: studies that have focused on sperm donors, recipient couples, donor offspring, partitioners or researcher's attitudes

towards oocyte donation were not included because the focus of this review is on oocyte donors or potential oocyte donors. Articles on oocyte donation for research were excluded because of the small number of papers on this topic and papers on embryo donation were also excluded because there is compelling evidence that asserts there are distinct differences in peoples' perceptions of embryos and oocytes (e.g. Söderström-Anttila et al., 2001; Kirkman, 2003; Roberts and Throsby, 2008).

### Study characteristics

All study methodologies and designs (e.g. quantitative, qualitative or case studies) and measurement outcomes were included. Study participants included actual oocyte donors (patient, known, commercial or volunteer oocyte donors) or potential donors.

### Screening and quality assessment

The first author (S.P.) independently screened titles, abstracts and full-text reports of all retrieved papers and this was cross-checked by the second author (O. van den A.). Any disagreements were resolved by discussion. The selection of studies was informed by the research question, inclusion/exclusion criteria and full consensus by both authors. Quality assessment on articles which met the inclusion criteria was based upon the protocol recommended by the Cochrane Database of Systematic Review. This was done by the first author and cross-checked by the second. However, the criteria were adjusted to fit the remit of this review.

- (i) Database: studies should be peer-reviewed in an English language journal with an abstract presented in an electronic database.
- (ii) Selection of participants: study participants should be clearly defined as patient, known, volunteer, commercial or potential donors.
- (iii) Outcome measures: the outcome measurements should be described, preferably including reliability and validity coefficient for quantitative studies and the research questions for qualitative studies.
- (iv) Study methodology: study methodology should be clearly described in sufficient detail which includes the recruitment of participants, sample size and description of participants, method and time of assessment and outcome measurements.

### Data abstraction

A standardized data extraction sheet was developed. Studies which met the eligibility and quality criteria were comprehensively examined and necessary information was extracted from each paper and tabulated by the first author (S.P.) and cross-checked by the second (O. van den A.). The extracted data from single studies included author's details, year of publication, study and participants' characteristics, sample size, assessment procedures, outcome measurements and summary of findings. Disagreements regarding extracted data were resolved by consensus.

### Search results

The titles of 8264 records were initially screened (dates of publication ranged from 1974 to 2009 for PubMed; 1961 to 2009 for Science Direct; 1996 to 2009 for Swetswise; and 1995 to 2009 for PsycInfo) and the majority of the records were medical/embryological papers or duplication of papers. Of these 8264 titles, the abstracts of 3348 records were reviewed and this led to the exclusion of any research articles that were not relevant (e.g. duplication in the searches, medical/embryological papers, papers focused on sperm donors or donor recipients/offspring or only fleetingly covered oocyte donation). Of the 3348 abstracts, full texts of 155 records were reviewed and 64 met the inclusion criteria and were included. Of the remaining 91 records which were rejected 78 records were relevant, commentaries, opinions or letters

(publication dates ranged from 1995 to 2008), 61 records were not relevant (publication dates ranged from 1988 to 2008) (e.g. medical, sperm donors, donor recipients/offspring or practitioner/researcher focused articles) and two were rejected (publication dates ranged from 1991 to 2004) because they were deemed poor quality, as outlined in the quality assessment quality (i.e. unexplained inconsistency in recruitment and lack of scientific rigour, respectively). The screening process is summarized in the study flow chart (Fig. 1).

## Results

There was considerable variation in research question, methodology and study design, quality, sample and sample size and outcome measurement between the 64 studies. Despite this, it was possible to extrapolate central issues which emerged and these are discussed below. The results section consists of seven subsections. First, methodological aspects of the studies are reviewed. Second, the results of studies with patient donors are discussed, followed by sections with known donors, commercial donors and volunteer donors. The sixth section reports findings which are relevant for all actual donor groups and not covered in individual subsections to avoid repetition. Finally, data with potential donors are reviewed separately.

## Study characteristics

The study characteristics of the 64 included articles can be for Tables I–IV. Tables I–III report the study characteristics of studies with patient, known, commercial and volunteer donors, while Table IV reports the study characteristics of potential donors. The tables are organized by donor type and includes key features: samples, methodologies and research questions, which provide important contextual information. Individual study results are not presented on the tables because they are discussed in detail in the results section. An overview of the methodological aspects of the studies included in the review will be discussed below and where relevant, distinctions between donor groups (patient, non-patient and potential donors) will be made.

### Country of origin

Oocyte donation practice varies across countries, and this will have an inevitable impact on the research output and create some diversity within the oocyte donation literature. Authors from 12 different countries have contributed to the psychological assessment of oocyte donation and with the exception of Turkey, all these countries permit oocyte donation. However, the majority of these studies were conducted either in the USA (22/64) or the UK (21/64).

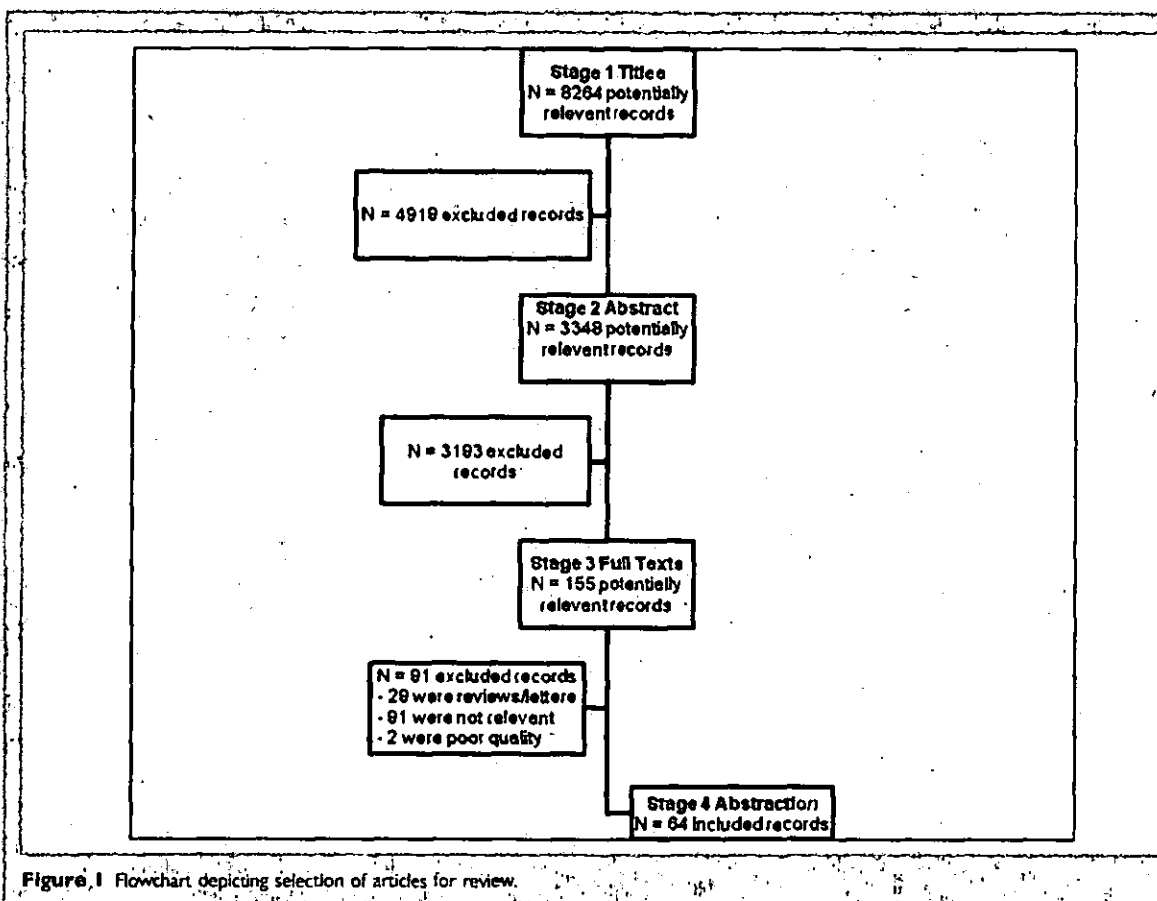


Figure 1 Flowchart depicting selection of articles for review.

resulting in an over-representation of white Western ideology and interpretation of what is a global phenomena (oocyte donation). Moreover, a substantial percentage of the research output from the USA has involved commercial donors.

Additionally, the majority of the studies which have examined the psychological profile of oocyte donors have also stemmed from the USA and relate specifically to commercial donors using prospective and retrospective research design (e.g. Schover et al., 1990; Lessor et al., 1993; Klock et al., 1999, 2003; Lindheim et al., 2001) (see Table II) and little research has been carried out on the psychological profile of patient, volunteer, known and potential oocyte donors. There are legitimate constraints therefore to how much the data from the USA can be generalized to other populations, which needs to be taken into account when interpreting the data presented in this systematic review. Studies from the UK have included a more balanced representation of the different donor groups, although they tend to be largely retrospective.

#### Research design

Studies on oocyte donation have used a combination of questionnaires or interview research designs; and as shown in Tables I–IV, some of the qualitative studies have not used a theoretical approach to analyse their data (e.g. Snowden, 1994; Kalfoglou and Geller, 2000a, b; Blyth, 2004), and not all studies have distinguished between donor groups in data analyses (e.g. Sauer and Paulson, 1992; Ahuja et al., 1997; Byrd et al., 2002; Frith et al., 2007). Furthermore, some of the sample sizes of the studies reviewed were relatively small. For example, Yee et al. (2007) reported a quantitative study on 13 known oocyte donors. As can be seen from Table IV, studies on general populations however reported more substantial participant numbers (e.g. Kalliasam et al., 2001; Skoog-Svanberg et al., 2003a, b; Purewal and van den Akker, 2009).

The research literature also includes studies using psychological interviews and psychometric assessments to determine the suitability of candidates for oocyte donation (e.g. Schover et al., 1990, 1991, 1992; Bartlett, 1991; Klock et al., 1999; Beakens et al., 2000), or questionnaire designs to assess oocyte donor's attitudes and experiences of the donation procedure post-donation (e.g. Rosenberg and Epstein, 1995; Fielding et al., 1998; Warren and Blood, 2003; Yee et al., 2007; Kenney and McGowan, 2009). However, many of the studies have not used standardized or validated questionnaires or do not report reliability or validities (see tables for the identities of these specific studies). In addition, with the exception of some studies (e.g. Kirkland et al., 1992; Skoog-Svanberg et al., 2003a, b; Purewal and van den Akker, 2006, 2009; Isikoglu et al., 2006), the outcome measurements used differ. Thus, some of the differences reported in the systematic review may be attributable to differences in the questions asked, however this will be discussed in more detail in the subsequent sections. Further, as can be seen from Tables I–III, follow-up studies with oocyte donors range from weeks (e.g. Klock et al., 1998), months (e.g. Söderström-Anttila, 1995; Braverman and Conson, 2002; Klock et al., 2003) to a few years after donation (e.g. Fielding et al., 1998; Kalfoglou and Gittelsohn, 2000; Yee et al., 2007; Kenney and McGowan, 2009). Thus, the data presented in the review is an immediate or short-term reflection of the psychosocial factors associated with oocyte donation and no assertions can be

made about long-term consequences of donating oocytes. The following sections will present some of the findings from these studies.

#### Patient donors

There were seven studies which examined patient donors and of these, three studies focused exclusively on patient donors and the remaining studies included samples of patient and volunteer donors (see Table I). As expected, studies have shown that the majority of patient donors were married (Power et al., 1990; Ahuja et al., 1997, 1998; Blyth, 2004) and a large proportion were nulliparous (Power et al., 1990; Ahuja et al., 1997). Oocyte donation through oocyte sharing agreements has been controversial in the UK (e.g. Hands off Our Ovaries campaign, HOOO, 2006). This is perhaps why all of the studies on patient donors have stemmed from the UK and as can be seen from Table I, an important theme within this literature has been whether donors donate for altruistic reasons or for self gain (e.g. access to fertility treatment).

#### Motivation

Ahuja et al. (1997, 1998) reported that patient donors felt helping another childless couple was just as important as helping themselves through the oocyte sharing model, and altruism was not the prerogative of their small sample of volunteer donors; even though 95% of volunteer donors were motivated to help a childless couple too. However, Ahuja et al.'s (1997, 1998) apparently contradictory findings have been supported by other studies. For example, Blyth (2004) interviewed patient donors on their motivation for donating and found that altruism and self interest were the primary reasons for donation and the majority of patient donors believed oocyte sharing is a 'win win' situation for all parties. In addition, Power et al. (1990) compared 15 patient donors to 20 volunteer donors and found that 90% of donors from both groups reported altruistic motives for donating. However, Rapport (2003) interviewed 11 prospective patient donors and showed that women were in 'pursuit of motherhood' which motivated them to donate their oocytes and not altruism.

#### Attitudes towards disclosure, donor offspring and recipients

Power et al.'s (1990) findings suggested that patient donors were more 'removed' from the oocyte donation process than volunteer donors. For example, they found that patient donors preferred not to know the pregnancy outcome of the donation, would not donate if recipients were informed of their identity, did not wish to meet the recipients and were less likely to donate to a known recipient compared with volunteer donors. However, Kirkland et al. (1993) found that patient and volunteer donors (they did not distinguish between donor groups in data analyses) reported significantly less objections towards meeting the donor offspring compared with recipients suggesting this could be a potential cause for conflict in the future with the removal of donor anonymity in the UK from 2005 (HFEA, 2004). Moreover, even before changes to UK legislation (Ahuja et al., 1997; Blyth, 2004), most patient donors agreed that donor offspring should be informed of their origins.

**Table 1** Characteristics of studies with patient, known and volunteer oocyte donors

Authors, year of publication and country	Sample	Method and time of assessment (pre/post donation)	Research question(s)
<b>I.a. Patient donors</b>			
1. Ahuja et al. (1998)/UK	114 patient donors	<b>Questionnaires<sup>b</sup></b> Post donation (women had donated between 1993 and 1997)	Investigate the motivation for oocyte sharing; attitudes towards donor off spring; and reflection on medical procedure
2. Blyth (2004)/UK	20 infertile women (and 18 husbands/partners) (22 were patient donors and 16 were enquirers)	<b>Interviews<sup>a</sup></b> Post donation/post enquiry (time since donation or enquiry unknown)	Explore the motivation for oocyte sharing; experiences of treatment; and attitudes towards various aspects of oocyte sharing
3. Rapport (2003)/UK	11 prospective patient donors	<b>Interviews</b> using van Manen's interpretative phenomenological analyses Pre-donation	Explore the beliefs, experiences and motivations for oocyte sharing
<b>I.b. Patient and volunteer/known donor</b>			
4. Ahuja et al. (1997)/UK	49 patient donors, 12 volunteer donors, 46 recipients patient and 110 women enquiring about oocyte donation	<b>Questionnaires<sup>b,c</sup></b> Post donation/post enquiry (time since donation or enquiry unknown)	Investigate the source of awareness; motivation to participate; reactions to medical procedure; attitudes towards oocyte donation issues; and perceived consequences of oocyte donation
5. Frith et al. (2007)/UK	75 oocyte donors (12 were patient donors and remaining were volunteer and known donors) (43 sperm donors)	<b>Questionnaires<sup>b,c</sup></b> Post donation (time since donation unknown)	Investigate attitudes towards the loss of donor anonymity
6. Kirkland et al. (1992)/UK	15 patient donors, 20 volunteer donors (50 recipients)	<b>Questionnaires<sup>b,c,d</sup></b> Post donation (women had donated between 1988 and 1989)	Compare attitudes of donors and recipients on secrecy, anonymity, disclosure, contact between donor and donor off spring and financial payment
7. Power et al. (1990)/UK	15 patient donors and 20 volunteer donors	<b>Questionnaires<sup>b,d</sup></b> Post donation (time since donation unknown)	Compare attitudes of patient and volunteer donors towards oocyte donation (including motivation); the recipients; donor off spring; recording of information; and experiences of medical treatment
<b>I.c. Known donors</b>			
8. Warren and Blood (2003)/Australia	29 known donors	<b>Questionnaires<sup>b</sup></b> Post donation (women had donated between 1997 and 2000)	Investigate the characteristics and motivations of known donors
9. Beatens et al. (2000)/Belgium	144 known donors (144 recipients)	<b>Psychological interviews</b> Pre-donation	Investigate recipient's decision making process of selecting a known or anonymous donor and examine donor's motivation for donating
10. Khamsi et al. (1997)/Canada	10 known donors (10 recipients)	<b>Psychological interviews</b> Pre-donation	Investigate the motivations for known donation and attitudes relating to disclosure, anonymity and social support
11. Winter and Daniluk (2004)/Canada	3 known donors	<b>Interviews</b> using narrative analysis Post donation (donor offspring were aged between 2 and 3 years at time of interview)	Explore the motivations, experiences of medical treatment, and post donation feelings
12. Yee et al. (2007)/Canada	13 known donors	<b>Questionnaires<sup>b</sup></b> Post donation (women had donated during 2000–2005)	Investigate the motivation for known donation, and attitudes towards medical treatment, counselling, disclosure and implication on relationship with recipients
13. Raoul-Duval et al. (1992)/France	32 known-anonymous donors* (32 recipient couples)	<b>Psychological interviews</b> Pre-donation and 3 years post donation	Explore the psychological mechanism and consequences of known-anonymous donation scheme
14. Weil et al. (1994)/France	69 known donors and 41 known-anonymous donors* (and their 110 recipients)	<b>Psychological interviews</b> Pre-donation	Compare motivations and attitudes towards confidentiality between donors and recipients involved in known donation and known-anonymous donation

Continued

Table 1 Continued

Authors, year of publication and country	Sample	Method and time of assessment (pre/post donation)	Research question(s)
15. Bartlett (1991)/ USA	16 prospective known donors [14 recipient infertile women; control group of 16 infertile women not needing exogenous gametes]	Psychological interviews and assessments (PSS & SCL-90) for oocyte donors & recipients and control group only completed PSS & SCL-90 Pre-donation for oocyte donors & recipients; N/A for control group	Investigate the motivations and expectations of known donation and examine the psychosocial, psychosexual, fertility, and family history of known donors and recipients

Note: Table is organized first by donor type (I.a. = Patient donors; I.b. = Patient and volunteer/known donors; I.c. = known donors), then alphabetically on country of origin.  
SCL-90 = Hopkins Symptom Checklist-90; PSS = Perceived Stress Score PSS.

\*Qualitative research methodology used without a theoretical approach.

\*Use of unstandardized questionnaires or no reported information on measurement's validity and reliability.

\*Data analyses did not distinguish between donor groups.

\*Questionnaire modified/translated from existing questionnaire.

\*Known-anonymous donors refers to recipients recruiting a known donor whose oocytes are distributed to another recipient couple, who in return provided the oocytes from their donor for the first couple.

#### Attitudes towards importance of genetic ties

Ahuja et al. (1998) also reported that their sample of 114 patient donors did not perceive the oocytes that they donated as 'their child' and they distanced themselves from the oocytes and downplayed the importance of a genetic link with any potential donor offspring. In addition, like Ahuja et al. (1998), Rapport found that patient donors often downplayed the importance of a genetic tie; however, Rapport's analyses revealed that donors did this as a mechanism to cope with the oocyte donation process and their doubts about oocyte sharing.

#### Known donors

As can be seen from Tables I–III, eight studies have included samples with known donors only, five have studied known donors with volunteers, and a further four have included samples of commercial donors. Raoul-Duval et al. (1992) and some of Weil et al.'s (1994) and Snowden's (1994) samples have included known-anonymous donors, which refers to recipients recruiting a known donor whose oocytes are distributed to another recipient couple, who in return provided the oocytes from their donor for the first couple. Although known donor's oocytes go to a couple whom they do not know, they are classified as known donors because they have decided to donate for a couple known to them (which means they are not volunteer donors either). Studies have generally reported that known donors are usually married, parous and related to the recipient (e.g. sister) or close friends (Raoul-Duval et al., 1992; Snowden, 1994; Greenfield et al., 1995; Khamsi et al., 1997; Beatens et al., 2000; Warren and Blood, 2003; Winter and Daniluk 2004; Yee et al., 2007).

#### Motivation

Unlike other donation types, there appears to be consensus within the known donation literature regarding the motivation for known oocyte donation. Studies with known donors have reported that the majority of known donors were motivated to donate because of their personal relationship with the recipients, particularly if they were related (Raoul-Duval et al., 1992; Snowden, 1994; Weil et al., 1994; Greenfield et al., 1995; Khamsi et al., 1997; Beatens et al., 2000;

Kalfoglou and Gittelsohn, 2000; Warren and Blood, 2003; Winter and Daniluk, 2004; Yee et al., 2007). Through psychological interviews, Raoul-Duval et al. (1992) found that all of their known-anonymous donors were donating their oocytes in an 'oocyte pool' in the hope that the recipient woman (often sisters or friends) 'could experience the supreme female accomplishment of motherhood' (pp. 52), suggesting the perceived importance of motherhood is an underlying factor too. Further, Warren and Blood (2003) found in their sample of 29 Australian known donors, that 65% of donors came from large families (three or more siblings) and nearly half of the sample indicated that their family experiences (such as love for sister and witnessing sister go through reproductive difficulties) had influenced their decision to donate.

#### Attitudes towards disclosure

There has been some research interest in known donor's attitudes towards disclosure because as they are known to the recipient family, they may have regular contact with the donor offspring. For example, Greenfield et al. (1995) found that known donors were less likely to believe the child should be informed of their genetic origins compared with commercial donors. Khamsi et al. (1997) found 80% of donors in known donation would not disclose information to a child, which concurs with Weil et al.'s (1994) findings. Although Yee et al. (2007) found a shift in attitudes towards more willingness to disclose to the donor offspring (9 out of the 13 known donors planned to disclose), the majority of donors however recognized that disclosure decision-making was the parents' decision. Further, there are some inconsistencies regarding the need for 'secrecy' within the family and this may be due to the small sample sizes of studies which have looked at this. For example, Khamsi et al. (1997) found that the majority of their donors and recipients (80%,  $n=20$ ) had not informed their friends and family about the oocyte donation program and Fielding et al. (1998) also found that known donors ( $n=7$ ) were less likely to tell other members of their family about their donation than volunteer donors ( $n=32$ ). However, these results are not conclusive because Yee et al. (2007) and Weil et al. (1994) reported that the majority of their sample of known donors had informed significant others.

**Table II Characteristics of studies with known and commercial oocyte donors**

Authors, year of publication and country	Sample	Method and time of assessment (pre/post donation)	Research question(s)
<b>2.a. Known and commercial donors</b>			
16. Greenfeld et al. (1995)/USA	26 prospective known donors and 49 prospective commercial oocyte donors	<b>Psychological Interviews</b> Pre-donation	Compare known and commercial donors on psychosocial history, motivation for donation, and attitudes towards disclosure
17. Kalfoglou and Geller (2000a)/USA	11 known and 22 commercial oocyte donors and 6 prospective oocyte donors (donor type unknown)	<b>Interviews<sup>a</sup></b> Pre-donation (for 6 women preparing to donate) and post-donation (for former donors, donated within 3 years at time of study)	Explore oocyte donor's experiences and knowledge of oocyte donation and their attitudes towards the outcome of donation
18. Kalfoglou and Geller (2000b)/USA	11 known and 22 commercial oocyte donors and 6 prospective oocyte donors (donor type unknown)	<b>Interviews<sup>a</sup></b> Pre-donation (for 6 women preparing to donate) and post-donation (for former donors, donated within 3 years at time of study)	Explore the relationship oocyte donors have with lawyers, psychologists and health care providers
19. Kalfoglou and Gittelsohn (2000)/USA	11 known and 22 commercial oocyte donors and 6 prospective oocyte donors (donor type unknown)	<b>Interviews<sup>a</sup></b> Pre-donation (for 6 women preparing to donate) and post-donation (for former donors, donated within 3 years at time of study)	Explore the motivations for oocyte donation and attitudes towards the medical treatment, levels of involvement and financial compensation
20. Sauer and Paulson (1992)/USA	33 prospective known and 17 commercial oocyte donors	<b>Psychological Interviews<sup>c</sup></b> Pre-donation	Investigate the demographic profile of oocyte donors and their medical treatment experiences
<b>2.b. Commercial donors</b>			
21. Almeling (2006)/USA	Staffs from 2 oocyte donation agencies and 1 sperm bank and clinic records of 549 commercial oocyte donors [and 44 commercial sperm donors]	<b>Clinic Records on donors and Interviews</b> with clinic staff N/A	Explore the rhetoric of altruism in oocyte and sperm banks and compare the recorded profiles of oocyte and sperm donors
22. Braverman and Corson (2002)/USA	235 commercial donors (80 surrogates)	<b>Questionnaires<sup>b</sup></b> Post-donation (donated or surrogated within 14 months at time of study)	Compare oocyte donors and surrogate mother's attitudes towards third party reproduction
23. Jordan et al. (2004)/USA	24 commercial donors	<b>Questionnaires<sup>b</sup></b> Post-donation (mean 21 months after donation)	Investigate oocyte donor's experiences and satisfaction with medical treatment
24. Kenney and McGowan (2009)/USA	80 Commercial donors	<b>Questionnaires<sup>b</sup></b> Post-donation (2-15 years after donation)	Investigate oocyte donor's motivations, expectations and experiences retrospectively
25. Klock et al. (1998)/USA	25 commercial donors	<b>Psychological Interviews and assessments</b> (PAI, STAI, SE; Donor Ambivalence Scale <sup>d</sup> ; PRAIS; Donor Motivation <sup>b</sup> and Post Donation Satisfaction Questionnaire <sup>e</sup> ) Pre and 2 week post donation	Investigate the psychological status and post-donation satisfaction and willingness to donate oocytes again
26. Klock et al. (1999)/USA	150 prospective commercial oocyte donors	<b>Psychological Interviews and assessments</b> (MMPI) Pre-donation	Investigate the scores of prospective commercial on the MMPI in four donor outcome groups
27. Klock et al. (2003)/USA	52 commercial oocyte donors	<b>Questionnaires</b> (SE; BSI; Donor Ambivalence Scale <sup>d</sup> ; Donor Motivation <sup>b</sup> ; Satisfaction <sup>b</sup> ; Donation Procedure <sup>b</sup> and Disclosure <sup>b</sup> questionnaire) Post-donation (women donated between 3 and 18 months at time of study)	Investigate the psychological status of oocyte donors and compare the psychological status of first time versus repeat donors
28. Lessor et al. (1993)/USA	95 prospective commercial oocyte donors	<b>Psychological Interviews and assessments</b> (MMPI) Pre-donation	Investigate the psychological status of prospective commercial donors

Continued

Table II Continued

Authors, year of publication and country	Sample	Method and time of assessment (pre/post donation)	Research question(s)
29. Lindheim et al. (2001)/USA	380 prospective commercial oocyte donors who received \$2500 for donation and 157 oocyte donors who received \$5000 for donation	Psychological interviews and assessments Pre-donation	Investigate the motivation for oocyte donation
30. Patrick et al. (2001)/USA	24 commercial oocyte donors	Questionnaires <sup>a</sup> Post donation (women had donated between 1993 and 2000)	Investigate motivation and attitudes towards oocyte donation and disclosure
31. Rosenberg and Epstein (1995)/USA	31 commercial oocyte donors	Questionnaires <sup>a</sup> Post donation (women had donated between 1992 and 1994)	Investigate attitudes, post donation experiences and satisfaction with oocyte donation
32. Schover et al. (1990)/USA	26 prospective commercial oocyte donors [43 matched-control participants]	Psychological interviews and assessments for prospective donors completed (CPI; MMPI; SCL-90) and control completed on reproductive traumas and family turmoil <sup>b</sup> questionnaire Pre-donation for prospective oocyte donors; N/A for control	Investigate the psychological status of prospective donors and compare to matched control participants
33. Schover et al. (1991)/USA	45 prospective commercial oocyte donors	Psychological interviews and assessments for 45 prospective donors completed (SCL-90 & MMPI) and 23 actual donors completed follow-up questionnaire <sup>c</sup> Pre and post donation (women had donated between 6 and 12 months at time of study)	Investigate the psychological status of prospective commercial donors and post donation satisfaction
34. Schover et al. (1992)/USA	45 prospective commercial oocyte donors [17 sperm donors]	Psychological interviews and assessments (MMPI) Pre-donation	Compare the psychological status and motivations of oocyte donors to sperm donors
35. Zwestel et al. (2006)/USA	32 commercial oocyte donors	Psychological interviews (research questions were asked during the initial and exit interviews) Pre-donation and post donation (immediately afterwards)	Investigate oocyte donors' attitudes towards oocyte and embryo disposition and change of attitudes over the course of the donation process

Note: Table is organized first by donor type (2a = known and commercial donors; 2b = commercial donors), then alphabetically on country of origin.

BSI = Brief Symptom Inventory; CPI = California Personality Inventory; SCL-90 = Hopkins Symptom Checklist-90; MMPI = Minnesota Multiphasic Personality Inventory; PAI = Personality Assessment Inventory; PRAS = Pennsylvania Reproductive Associates Infertility Scale; SE = Rosenberg Self-Esteem Scale; STAI = State-Trait Anxiety Inventory.

<sup>a</sup>Qualitative research methodology used without a theoretical approach.

<sup>b</sup>Use of unstandardized questionnaires or no reported information on measurement's validity and reliability.

<sup>c</sup>Data analyses did not distinguish between donor groups.

<sup>d</sup>Questionnaire modified/translated from existing questionnaire.

#### Attitudes towards donor offspring and recipients

Studies have found that most known donors questioned prefer minimal or no contact with the donor offspring (Weil et al., 1994; Khamisi et al., 1997; Fielding et al., 1998; Beazens et al., 2000; Kirkman, 2003; Yee et al., 2007). Yee et al. (2007) reported that many of their known donors would treat the donor child as any other child of their friends or family. Khamisi et al. (1997) explored contact with donor offspring and found that no known donor reported anticipating any possessive feelings or an urge to raise the donor child themselves. However, the known donors were interviewed with the recipients couple, which compromises the validity of their responses in the study. Further, the way the question is asked may account for some of the differences and contradictions. For example, Beazens et al. (2000) found a significant minority of known donors had ambivalent feelings towards the child. Specifically, donors felt a responsibility

towards the child and wished to be sure that the child would be well taken care of by the recipient parents.

Bartlett (1991) reported data on psychological interviews and assessments conducted with 16 known donors and 14 recipients before the donation. Results revealed that half of the donors (and the recipients) expected their relationship with the recipient to become closer after treatment. There is some evidence to suggest that the expectations of strengthening relationships between donors and recipients are realized. For example, a couple of studies with known donors post-donation have found that for some donors, there had been a deepening of relations or a 'positive change' in their relationship with the recipients (Wreter and Daniluk 2004; Yee et al., 2007), but a small minority had experienced some difficulties, particularly seeing the donor offspring (Yee et al., 2007). Where the donation had not resulted in pregnancy, profound disappointment for the recipient had been felt by donors

**Table III Characteristics of studies with known and volunteer oocyte donors**

Authors, year of publication and country	Sample	Method and time of assessment (pre/post donation)	Research question(s)
<b>3.a. Known and volunteer donors</b>			
36. Kirkman (2003)/Australia	6 known and 6 volunteer donors [5 embryo donors and 21 recipients]	Interviews using narrative analysis Post-donation (time since donation unknown)	Explore the meaning of motherhood in the context of oocyte and embryo donation
37. Shaw (2007)/New Zealand	2 known and 12 volunteer donors. Of these, 4 (1 known donor and 3 volunteer donors) had gone on to become surrogate mothers	Interviews using narrative analysis Post-donation (time since donation unknown)	Explore the rhetoric of 'gift-exchange' in the context of oocyte donation and surrogacy
38. Byrd et al. (2002)/UK	14 known and 99 volunteer donors	Questionnaires <sup>b,c</sup> Post-donation (time since donation unknown)	Investigate the motivation and medical treatment experiences of oocyte donors
39. Fielding et al. (1998)/UK	7 known and 32 volunteer oocyte donors [34 sperm donors]	Questionnaires <sup>d</sup> Post-donation (women had donated between 1992 and 1996)	Investigate the attitudes and motivations of oocyte donors and compare them to sperm donors
40. Snowden (1994)/UK	1 known-anonymous donor <sup>e</sup> , 3 volunteer donors [5 recipients; 2 gestational surrogates; 2 commissioning surrogate mothers]	Interviews <sup>a</sup> Post-donation (time since donation unknown)	Explore the meaning of motherhood in the context of oocyte donation and surrogacy
<b>3.b. Volunteer donors</b>			
41. Söderström-Anttila (1995)/Finland	27 volunteer donors	Questionnaires <sup>b</sup> Post-donation (women had donated between 12 and 18 months at time of study)	Investigate post donation experiences and attitudes towards oocyte donation
42. Craft et al. (2005)/UK	504 volunteer donors [and 363 recipients]	Questionnaires <sup>b</sup> Post-donation (women had donated between 1986 and 2003)	Investigate attitudes towards the loss of donor anonymity
43. Kan et al. (1998)/UK	145 volunteer oocyte donors and 356 non-donors (enquired but did not donate)	Questionnaires <sup>b</sup> Post-donation (women had donated during 1988–1995)/post enquiry (women had enquired during 1994–1995)	Investigate and compare the demographic characteristics and reasons for donating oocytes and not donating

Note: Table is organized first by donor type (3.a. = known and volunteer donor; 3.b. = volunteer donors), then alphabetically on country of origin.

<sup>a</sup>Qualitative research methodology used without a theoretical approach.

<sup>b</sup>Use of unstandardized questionnaires or no reported information on measurement's validity and reliability.

<sup>c</sup>Data analyses did not distinguish between donor groups.

<sup>d</sup>Questionnaire modified/translated from existing questionnaire.

<sup>e</sup>Known-anonymous donors refers to recipients recruiting a known donor whose oocytes are distributed to another recipient couple, who in return provided the oocytes from their donor for the first couple.

(Fielding et al., 1998; Kalfoglou and Geller, 2000a; Winter and Daniluk 2004; Yee et al., 2007).

### Commercial donors

As can be seen from Table II, there were 14 reports which focused entirely on commercial donors and a further five reports consisted of samples of commercial and known donors. All of the studies with commercial donors have come from the USA. Some of the studies with commercial donors have reported that the majority of donors were single and nulliparous (Schover et al., 1990; Rosenberg and Epstein, 1995; Klock et al., 1999, 2003; Lindheim et al., 2001; Patrick et al., 2001; Jordan et al., 2004).

#### Motivation

The motives of commercial donors appear to be mixed because although many commercial donors have reported altruistic motives behind their donation (Schover et al., 1990, 1991; Klock et al., 1998, 2003; Almeling, 2006), financial gain has also been noted

(Sauer and Paulson, 1992; Greenfield et al., 1995; Kalfoglou and Gitte sohn, 2000; Patrick et al., 2001). These inconsistencies in studies could be explained by the fact that some of the data are from psychological assessment of prospective donors (e.g. Schover et al., 1990, 1991; Sauer and Paulson, 1992; Greenfield et al., 1995) limiting reliability of the results, because donors are more likely in assessment circumstances to report altruistic motives than financial ones. Lindheim et al. (2001) found that financial motivation was greater for prospective commercial donors receiving \$5000 dollars compared with donors receiving \$2500 and Kenney and McGowan (2009) found students (at the time of donation) were more likely to be financially motivated than non-students. Moreover, Patrick et al. (2001) found that the majority of commercial donors believed financial compensation was necessary to compensate for the hardship they endure and most donors would not donate if payment was not provided. Further, Klock et al. (2003) found that repeat donors were more likely to rate financial compensation as positive aspects of donation although the opposite was found by Kenney and McGowan (2009).



Table IV Characteristics of studies with potential donors

Authors, year of publication and country	Sample	Method	Research question(s)
<b>4.a. Potential patient and potential non-patient donors</b>			
44. Urdapileta et al. (2001)/Argentina	55 infertile patients on waiting list for oocyte donation; 35 infertile patients who can use their own oocytes; and 67 fertile participants	Questionnaires <sup>b</sup>	Investigate fertile and infertile population attitudes towards oocyte donation
45. Bharadwaj (2003)/India	43 infertile patients and clinicians (n for each group unknown)	Interviews <sup>a</sup>	Explore the experiences of infertility treatment for Indian infertile populations
46. Westander et al. (1998)/Sweden	50 IVF patients: 62 investigating infertility problem; 50 attending maternity unit after delivery; 50 attending family clinic for therapeutic abortion; and 44 Turner Syndrome	Questionnaires <sup>b</sup>	Investigate fertile and infertile population attitudes towards oocyte donation
47. Baykal et al. (2008)/Turkey	368 infertile women	Questionnaires <sup>b</sup>	Investigate infertile population attitudes towards gamete donation and surrogacy
48. Baluch et al. (1994)/UK & Iran	25 infertile British women and 50 fertile British women; 50 infertile Iranian women and 50 fertile women	Questionnaires <sup>b</sup>	Investigate fertile and infertile Iranian and British attitudes towards oocyte donation
49. Bolton et al. (1991)/UK	53 Infertile patients receiving oocyte donation; 134 infertile patients receiving donor insemination; 168 potential patient donors; and 44 general population control group (190 men and 290 women were in the sample however the gender ratio in each group is unknown)	Questionnaires	Investigate differences in fertile and infertile population attitudes towards oocyte donation
50. Kazem et al. (1995)/UK	Females (97 fertile; 113 infertile; 20 recipient mothers; and 28 oocyte donors*) [Males (25 fertile; 75 infertile; 17 recipient)]	Questionnaires <sup>b</sup> <i>Unknown for oocyte donors and N/A for fertile and infertile participants</i>	Investigate differences in fertile and infertile, men and women's attitudes towards oocyte donation
51. Lyall et al. (1995)/UK	870 women attending a family planning centre, 160 women attending an abortion clinic and 180 women attending a fertility clinic	Questionnaires <sup>b</sup>	Investigate infertile and fertile population attitudes towards donated ovarian tissue from donors, cadavers and fetuses
52. Oskarsson et al. (1991)/UK	222 Infertile couples	Questionnaires <sup>b</sup>	Investigate infertile population's attitudes towards oocyte donation
<b>4.b. Potential non-patient donors</b>			
53. Chliaoutakis (2002)/Greece	180 males and 185 females from general population	Structured interviews <sup>b,c</sup>	Investigate population attitudes and intentions towards oocyte donation and surrogacy
54. Chliaoutakis et al. (2002)/Greece	185 females [180 males] from general population	Structured interviews <sup>b,c</sup>	Investigate population attitudes and intentions towards oocyte donation and surrogacy
55. Khalili et al. (2006)/Iran	100 Christians (49% female) and 100 Muslims (94% female)	Questionnaires <sup>b</sup>	Investigate ethnic differences in attitudes towards oocyte donation
56. Skoog-Svanberg et al. (2003a)/Sweden	724 women from the general population	Questionnaires	Investigate factors influencing the willingness to donate oocytes
57. Skoog-Svanberg et al. (2003b)/Sweden	729 women [556 men] from general population	Questionnaires	Investigate population attitudes towards oocyte donation
58. Isikoglu et al. (2006)/Turkey	232 females [168 males] from general population	Questionnaires <sup>d</sup>	Investigate population attitudes towards oocyte donation
59. Brett et al. (2008)/UK	143 females from general population	Questionnaires <sup>b</sup>	Investigate the impact of removal of donor anonymity on willingness to donate
60. Culley et al. (2007)/UK	67 women [10 men] from British South Asian background	Focus Groups using thematic analysis	Explore the meaning of infertility for British South Asians
61. Kailasam et al. (2001)/UK	428 women [and men] from the general population	Questionnaires <sup>b</sup>	Investigate population attitudes towards gamete donation
62. Purewal and van den Akker (2006)/UK	101 women from general population	Questionnaires <sup>d</sup>	Investigate ethnic differences in the importance of altruism and willingness to donate

Continued

Table IV Continued

Authors, year of publication and country	Sample	Method	Research question(s)
63. Purewal and van den Akker (2009)/UK	349 women from the general population	Questionnaires <sup>d</sup>	Investigate population attitudes towards oocyte donation and examine the link between oocyte donation intentions and reasons for parenthood
64. Lessor et al. (1990)/USA	501 women [and men] from the general population	Structured Interviews <sup>b,c</sup>	Investigate population attitudes towards oocyte donation between sisters

Note: Table is organized first by donor type (4.a. = Potential patient donors; 4.b. = potential non-patient donors), then alphabetically on country of origin.  
<sup>a</sup>Qualitative research methodology used without a theoretical approach.  
<sup>b</sup>Use of unstandardized questionnaires or no reported information on measurement's validity and reliability.  
<sup>c</sup>Responses from structured interviews were converted into quantitative data.  
<sup>d</sup>Questionnaire modified/translated from existing questionnaire.  
<sup>e</sup>The oocyte donor group in Kazem et al.'s (1995) study was unknown, so their data was not included in the tables with actual donors.

However, donors who reported altruistic motives are more likely to report post-donation satisfaction (Klock et al., 1998; Kenney and McGowan, 2009). Some unusual and self gratifying reasons for donating oocytes among commercial donors have also been reported, such as the confirmation of their fertility (Jordan et al., 2004) and to pass on their genes (Kalfoglou and Gittelsohn, 2000). Researchers have noted commercial (and known) donors were motivated to make up for a loss, such as a past abortion or rape (Schover et al., 1990, 1991, 1992; Klock et al., 1998, 1999; Kalfoglou and Gittelsohn, 2000; Jordan et al., 2004).

#### Psychological profile.

Schover et al. (1990, 1991, 1992) used the Minnesota Multiphasic Inventory (MMPI) and reported a disturbing picture of prospective commercial donors. They found that just over half of their sample reported mild depressive episodes or anxiety symptoms and two women had a major psychiatric disorder. Other studies have reported contradictory reports, for example, Greenfeld et al. (1995), Klock et al. (1998, 1999, 2003) and Lessor et al. (1993) evaluated commercial (some were prospective) donors and found no significant psychopathology and scores on psychological measures such as the MMPI were within normal ranges. However, Lessor et al. (1993) and Klock et al. (1999) reported that prospective commercial donors often demonstrated non-traditional sex role beliefs and behaviours. It is important to note however that the American Society for Reproductive Medicine (ASRM, 2004a, b) have set guidelines on the psychological assessment of oocyte donors and women who demonstrate psychological risk would not normally be considered as candidates. So, although prospective donors might demonstrate some psychopathology (e.g. Schover et al., 1990, 1991, 1992), accepted donors reported in the research literature generally do not (e.g. Klock et al., 1998, 2003). For example, Klock et al. (1999) reported that from a total of 150 commercial applicants, 32 (21%) were rejected because of psychological concerns such as depression and obsessive-compulsive disorder and a similar percentage were also rejected by Lessor et al. (1993).

Moreover, data reported from studies on the psychological interviews of oocyte donors must be interpreted with some caution. As

mentioned previously, a problem with these clinical studies are that they report psychological interviews and assessments as part of the oocyte donation eligibility process, and it is possible that women may be 'impression managing'. To some extent these fears have been realized in the data. For example, Schover et al. (1990), Lessor et al. (1993), Klock et al. (1999) reported elevated K scores on the MMPI (version 1 and 2), which represented an attempt to minimize anxiety and present themselves favourably. Further, Kalfoglou and Geller (2000b) in an in-depth interview study noted that commercial donors concealed certain information from the mental health practitioner conducting the psychological interviews because they understood they could be excluded from the donation procedure with their personal details.

#### Attitudes towards donor offspring and recipients

There is evidence which indicates that most commercial donors would want information on the outcome of the pregnancy (Klock et al., 1998; Kalfoglou and Gittelsohn, 2000; Kalfoglou and Geller, 2000a; Patrick et al., 2001; Klock et al., 2003; Jordan et al., 2004). Further, Kalfoglou and Geller (2000a), Patrick et al. (2001), Braverman and Corson (2002) and Klock et al. (2003) all reported a significant proportion of donors would not object to contact with the donor offspring once they are of age. However, Kalfoglou and Geller (2000a) conducted in-depth interviews with donors (the majority were commercial donors) and found that most donors were given little or no information about the recipients. Some donors reported that additional information might make donation more complicated and felt characteristics such as age, race or religion of the recipient couple were not important to them. Most participants were reassured knowing that the couple desperately wanted to have a child. However, Jordan et al. (2004) did find that a significant minority (37.5%) of commercial donors were concerned about the parenting style of recipients. Zweifel et al. (2006) found that donor's attitudes towards certain recipients (e.g. to women of advanced age or those using sperm from a deceased husband) changed from pre-donation to post-donation and reflected a greater reservation towards willingness to donate oocytes to them. Moreover, it was interesting to note that Kenney and McGowan (2009) found that 31% ( $n = 80$ ) of donors

reported they were aware that they may experience a sense of loss and emotional attachment towards the oocytes/offspring at the time of donation, unfortunately Kenney and McGowan did not collect data on whether these feelings were realized after donation.

### Volunteer donation

Although, only three investigations have focused on volunteer donors exclusively, four studies have included samples of volunteer and patient donors, and five studies have combined samples of volunteer and known donors (see Tables I and II). The demographic profile of volunteer donors in the research literature suggests that most volunteer donors were married and parous (Power et al., 1990; Söderström-Anttila, 1995; Fielding et al., 1998; Kan et al., 1998; Byrd et al., 2002).

#### Motivation

Studies with volunteer donors have found that donors often report general altruistic motives for donating (Fielding et al., 1998; Power et al., 1990; Söderström-Anttila, 1995; Byrd et al., 2002). However, other reasons have been noted such as experiences of infertility, either personally or through witnessing family or friends (e.g. Fielding et al., 1998; Byrd et al., 2002). Most volunteer donors were against payment for oocyte donors (Power et al., 1990; Kirkland et al., 1992; Fielding et al., 1998) and Shaw (2007) found some of the oocyte donors she interviewed believed any financial compensation would cheapen their 'gift' to other women. However, Byrd et al. (2002) reported donors considered payment to be acceptable to cover expenses but not for financial gain.

#### Attitudes towards disclosure, donor offspring and recipients

Fielding et al. (1998) adapted an existing questionnaire that had been used with sperm donors and surveyed 32 volunteer and seven known donors a few years after they had donated, and reported a number of inconsistencies within oocyte donors. For example, although volunteer donors reported they do not want any contact with recipients or any involvement with donor offspring upbringing, they were also very curious about the recipients, wished to know the outcome of the donation and cared about the recipient's treatment, believed they would not be able to forget about their donation and also reported that donor offspring should be informed of their genetic origins. Similarly, Söderström-Anttila (1995) reported that although 41% of volunteer donors ( $n = 27$ ) preferred not to have any information about the donor offspring or recipient couple, 48% would be willing to take care of the donor child if both parents died. Further, a large percentage (59%) of donors thought the donor offspring should be told of their genetic origins, however only 33% believed the donor offspring has the right to obtain identifying information about the donor. However, there has been no recent work with volunteer donors to ascertain their attitudes towards disclosure (although attitudes towards anonymity has been examined), despite changes to legislation in a number of European countries.

#### Donor anonymity

Craft et al. (2005) surveyed 504 former volunteer donors in the UK about the current change in UK legislation using a short questionnaire consisting of three items and yes/no/unsure category responses. They found that 69% of their sample of volunteer donors said they would

donate again, even after the removal of anonymity, however 36% would not donate at all if anonymity were to be waived. Although the measurement was crude, Craft et al. suggested this drop would have a significant impact on the current shortage of oocyte supply. Frith et al. (2007) however used a detailed questionnaire with former UK donors (mostly volunteers) on their concerns regarding the removal of anonymity and 32% of the issues raised concerned consequences of a donor offspring making contact after 18 years. Included in these concerns were issues relating to emotional lability; personal security; impact on family members (particularly spouse); and psychological effects on both donor and child. Unfortunately, Frith et al. (2007) did not distinguish between volunteer, patient and known donors in their data analyses, so there is no information on between-group differences. It is important however to note that even during a political and social climate which considered anonymous donation as the only 'correct' form of donation in the UK (Warnock Report, 1984), Power et al. (1990) found that 87% of volunteer donors would still consider donating as identifiable donors.

### All donor groups

Oocyte donor's experiences of the donation procedure have been recorded for all donor groups and there was a high degree of consensus in the research findings. So, to avoid repetition within the review, this section is devoted to presenting a summary of these findings.

#### Oocyte donation experience

On the whole, there is consistent evidence demonstrating that the oocyte donation procedure is well tolerated and most donors of all donation types report high levels of satisfaction with the quality of medical care (Power et al., 1990; Schover et al., 1991; Kirkland et al., 1992; Rosenberg and Epstein, 1995; Söderström-Anttila, 1995; Ahuja et al., 1998; Klock et al., 1998, 2003; Kalfoglou and Gittelsohn, 2000; Braverman and Corson, 2002; Jordan et al., 2004; Yee et al., 2007; Kenney and McGowan, 2009). Although 43% of known and volunteer donors in Byrd et al.'s (2002) study found the process painful, stressful or both, most donors concluded that the procedure had been manageable. Kenney and McGowan (2009) found that the majority of commercial donors (63%) reported a 'perfect' match between their expectations of donating oocytes and their actual experiences, which suggest clinicians have been reasonably successfully in preparing donors for the medical procedure. Despite this, only a minority were aware that 'pain' and 'bloating' were common side effects, which were experienced by 45 and 31% of the sample, respectively. An important feature in a donor's experiences of donation was meetings with mental health practitioners (counsellors, psychologists and psychiatrists). Studies have found that the majority of donors of all donor groups questioned found counselling invaluable (Schover et al., 1991; Ahuja et al., 1997, 1998; Patrick et al., 2001; Jordan et al., 2004) and helpful in making disclosure decisions in known donation (Winter and Oranik, 2004; Yee et al., 2007). However, some complaints have been noted (e.g. Jordan et al., 2004) and some commercial donors reported medical staff were cold and impersonal and they were made to feel like a commodity (Kalfoglou and Gittelsohn, 2000). However, the most notable complaint was more practical and relating to time inconvenience, and to

the geographical distance that donors (known, commercial and volunteer) had to travel (Sauer and Paulson, 1992; Patrick et al., 2001; Byrd et al., 2002; Yee et al., 2007) but not to the medical or physical aspects of donation (e.g. hormonal injections, retrieval, side effects). Indeed, Kan et al. (1998) reported that 'distance involved' (40% of  $n = 280$ ) was the main reason why women (in volunteer donation) dropped out of the oocyte donation process and concerns over the drug regime came second (31.8%).

Studies have found that when questioned, most donors from all donor groups reported they would donate again (Power et al., 1990; Schover et al., 1991; Ahuja et al., 1997; Fielding et al., 1998; Klock et al., 1998; Byrd et al., 2002), and Söderström-Anttila (1995) surveyed 27 volunteer donors and none of them regretted donating their oocytes. Rosenberg and Epstein (1995) found that 90% of their sample of 32 commercial donors claimed that donation changed their life in a positive way, suggesting the psychological benefits outweigh the physical costs of the oocyte donation process.

The studies reviewed so far have focused on actual oocyte donors. However, as there is an acute shortage of oocyte donors, it is important to investigate what women from the general and patient populations (potential donors) think about oocyte donation. These findings help to form the context to which patient and non-patient donate their oocytes and works as a 'foil' for the research literature with actual donors.

### Potential donors

There were 21 studies which examined general and patient population attitudes towards oocyte donation (see Table IV). As can be seen from the research question(s) segment of Table IV, most of these studies have reported general attitudes towards oocyte donation and intentions to donate, and the findings from these studies are reviewed below.

#### Attitudes towards oocyte donation

Overall, studies that have assessed women and men from the general population's attitudes towards oocyte donation have largely observed positive attitudes towards oocyte donation, irrespective of the date the studies were carried out (Lessor et al., 1990; Bolton et al., 1991; Kazem et al., 1995; Lyall et al., 1995; Westlander et al., 1998; Kailasam et al., 2001; Urdapilleta et al., 2001; Chilaoutakis, 2002; Skoog-Svanberg et al., 2003a, b; Isikoglu et al., 2006; Khalili et al., 2006; Purewal and van den Alder, 2006, 2009; Brett et al., 2008). However, knowledge of oocyte donation was often low (Chilaoutakis et al., 2002; Isikoglu et al., 2006; Khalili et al., 2006; Baykal et al., 2008), particularly among the fertile populations (Kazem et al., 1995).

#### Demographic differences in attitudes

There appear to be some gender, fertility status and ethnic differences between participants in their attitudes towards oocyte donation. For example, studies have found men are more positive and accepting of oocyte donation than women (Lessor et al., 1990; Chilaoutakis, 2002; Isikoglu et al., 2006). Infertile populations find oocyte donation more acceptable than fertile participants (Bolton et al., 1991; Kazem et al., 1995) and Kazem et al. (1995) noted that support for oocyte donation was greater if the individuals were aware that their infertility could only be treated with donated gametes. However, Baluch et al. (1994) found the opposite and fertile British and Iranian women

were significantly more positive towards oocyte donation than infertile women. Baluch et al. recruited their fertile group from a university population (mean age 21) and their results suggest that younger women may have more simplistic attitudes towards oocyte donation than women who are older or infertile (e.g. Kazem et al., 1995).

#### Ethnic differences in attitudes

There also appear to be ethnic differences in attitudes towards oocyte donation; however, the data is complex and contradictory. For example, Purewal and van den Alder (2006) found British South Asian women were significantly less likely to agree to donate their oocytes than Caucasian British women. Cufley et al. (2007) found that British South Asians considered oocyte donation to be socially unacceptable, however using donated oocytes was still considered to be more acceptable than using donated sperm, a preference also observed in Caucasian participants (Kazem et al., 1995; Kailasam et al., 2001). Similar findings were echoed in Bharadwaj's exploration of attitudes towards gamete donation among Indian infertile populations. Chilaoutakis et al. (2002) reported a significant link between religiosity and reluctance to donate among Greek populations. However, Bharadwaj (2003) found that attitudes towards oocyte donation were complex. For example, although infertile participants reported objections to oocyte donation (mainly on religious grounds); they still considered it to be acceptable, as long as it was kept secret. Studies from some Islamic countries have also found that men and women share positive attitudes towards oocyte donation (e.g. Isikoglu et al., 2006; Baykal et al., 2008), despite the fact that some Muslims believe third party conception is forbidden by Islamic law (Inhorn, 2006). It is possible that the pursuit of parent/motherhood through any means available (e.g. donated gametes) overrides any religious or societal objections. For example, Lyall et al.'s (1995) (with a majority Caucasian sample) found that the high levels of public support for oocyte donation observed in their study stemmed partly from the fact that oocyte donation allowed women to experience motherhood. Purewal and van den Alder (2009) found that women reporting a willingness to donate (36% of  $n = 349$  in a majority Caucasian sample) were more likely to endorse non-conventional perceptions of parenthood, which coincided with their positive beliefs about the importance of parenthood. Yet, Khalili et al. (2006) found that Christian Iranians were more supportive of oocyte donation than Muslim Iranians. However, 51% of the Christian sample and only 6% of the Muslim sample were males and as other studies have found males are more supporting of oocyte donation than females (e.g. Lessor et al., 1990; Chilaoutakis, 2002; Isikoglu et al., 2006), it is possible that this may also explain in part some of these observed differences.

#### Attitudes towards disclosure

In 1991, only 36% of  $n = 272$  UK infertile patients thought the donor offspring should receive non-identifying information (Oskarsson et al., 1991). Whereas in 2006, nearly half of Purewal's and van den Alder's non-patient sample held positive attitudes towards identifiable donation and supported the oocyte donor having a relationship with the donor offspring's family. Urdapilleta et al. (2001) too found that over half of their sample of fertile and infertile Argentinean participants believed that parents should inform the donor offspring of their genetic origins and these findings concur with Skoog-Svanberg

et al.'s (2003b) more recent results in Sweden. However, Turkish (Isikoglu et al., 2006) and Iranian (Khalili et al., 2006) populations were more likely to believe donor offspring should 'never' be informed of their genetic origins.

#### Removal of donor anonymity

Studies that have measured women's intentions to potentially donate before the removal of donor anonymity (Oskarsson et al., 1991 in the UK; Westlander et al., 1998 in Sweden) and during or after (Brett et al., 2008; Purewal and van den Akker, 2009 in the UK; Skoog-Svanberg et al., 2003a in Sweden) have reported that a significant minority of fertile and infertile populations continue to report willingness to donate as identifiable donors. However, these data might be misleading or unduly encouraging because these studies have all reported intentions and not actual behaviour.

## Discussion

### Summary of research synthesis

The aims of this systematic review were to integrate the findings regarding the psychological determinants of oocyte donation and to explore women's experiences of donation. We conclude that general attitudes towards oocyte donation are positive. There were intrinsic differences between the donor groups on demographic characteristics, motivation for oocyte donation and attitudes towards disclosure of genetic origins to child. Recognition of these differences may have implications for future recruitment. Studies have also revealed that a significant proportion of patient donors, non-patient donors and women from the general population were willing to donate their oocytes as identifiable donors. The oocyte donation procedure is well tolerated and most donors of all donor type report high levels of satisfaction with the experience.

### Motivation

Motivation for oocyte donation has been a key feature in the oocyte donation literature and the results suggest that donor's motives differ depending on their donation 'type'. For example, there appears to be some ambiguity relating to patient donor's motives for donating. Whereas, research indicates that known donors were motivated by their personal relationship with the recipient couple; volunteer donors reported they were motivated by general altruistic motives; and commercial donors have reported altruistic and financial motives for donation. However, the use of psychological interviews and assessments in oocyte donation motives is problematic and raises serious concerns on the validity of reported motivations of oocyte donors. Further, it is likely that financial motivation stems from the availability of financial gain and is not necessarily an impetus to donate, since it never features in research studies of countries where no financial gain is possible (e.g. Power et al., 1990; Kirkland et al., 1992; Kazem et al., 1995; Ahuja et al., 1998; Fielding et al., 1998; Shaw, 2007).

### Attitudes towards disclosure and the removal of donor anonymity

On the whole, there appears to be a cultural shift towards more favourable attitudes towards disclosure. However, this is more evident in studies with general population samples (e.g. Oskarsson et al., 1991; Purewal and van den Akker, 2006) than actual donors, but this is probably because attitudes towards disclosure has not been consistently examined (i.e. before changes to legislation and after in countries where this applies) within the same donor group. In addition, the literature also suggests that a proportion of commercial, volunteer, patient donors and potential donors would donate as identifiable donors. Although reassuring, there still remains a sizeable minority of donors who will not donate as a consequence of recent legislation removing donor anonymity, and because of the shortage of oocyte donors across Europe and the UK, this will undoubtedly cause concerns for recruiting clinics.

### Current state of research and future direction

There were a number of methodological limitations identified in this systematic review relating to the research literature as a whole. Specifically, many studies have reported small numbers, even in quantitative studies. There were only a limited number of studies with patient donors, which is surprising as they make a considerable proportion of the oocyte donor population in the UK (HFEA, 2007). Furthermore, oocyte donors are rarely compared with any appropriate control groups. A number of studies have reported data used to screen donors, which can be problematic. There is also a lack of intervention work or application of theory in oocyte donation research, as pointed out previously (e.g. Fielding et al., 1998; Applegarth and Kingberg, 1999; van den Akker, 2006) and there is no evidence of longitudinal work with oocyte donors that has assessed the long-term consequences of donation. Follow-up studies with oocyte donors ranged from weeks, months or just a few years after donation. Thus, there is no understanding of how the oocyte donors feel about donating oocytes and the donor offspring in the future. This is of particular concern in countries where donor offspring can seek contact with donors after 18 years. Without longitudinal follow-up research, it is impossible to prepare oocyte donors about the long-term implications of donating oocytes.

In addition, it is possible there is a certain degree of 'sampling bias' within the oocyte donation literature. For example, many studies have found that donors find counselling helpful (e.g. Schover et al., 1991; Ahuja et al., 1997, 1998; Patrick et al., 2001; Jordan et al., 2004). However, anecdotal accounts from clinics indicate that many oocyte donors do not actually take-up counselling which is offered. It is possible therefore that the 'type' of donor who participates in research, may be the 'type' of donor who would find the counselling experience useful, and they may not be representative of the oocyte donor population. Furthermore, it may be that only participants with positive attitudes, motivations and experiences have participated in the studies; resulting in the high consensus of favourable attitudes, motives, experiences and possibly leading to publication bias (Thomson and Lee, 2000).

There has been no psychological profiling of volunteer or patient donors, but a great deal has been done on commercial donors and

some with known donors. Generally, research has found that commercial and known donors do not display any serious psychopathology. These results are to be expected because women who display psychopathology would not be accepted as commercial donors (ASRM, 2004a, b) and family members and couples are unlikely to recruit women who display any visible signs of psychopathology for known donation. It is important therefore to establish the psychological profile of other donor groups, particularly women who voluntarily donate their oocytes without a personal request or prompt and in essence recruit themselves.

The methodological limitations identified and the synthesis of the research findings apply only to English-language publications and no generalization can be made about non-English studies. This is undoubtedly a limitation of this systematic review (for example see Moher et al., 1998). However, additional research using titles and [when available] abstracts from non-English articles (in the same databases) revealed that only a handful of non-English articles (5 French; 2 German; and 1 Dutch) may have been relevant to the aims of this systematic review. Thus, the exclusion of non-English papers should not compromise the accuracy of this review. However, most of the published papers have stemmed from the USA and UK and lack of non-English publication does result in a lack of global understanding of oocyte donation. Similarly, there is little in the research evidence that also reflects the rise in cross border reproductive care (Heng, 2006; ESHRE, Task Force on Ethics and Law, 2008) and attitudes towards the use of donated oocytes from other countries, and this is another serious limitation.

## Conclusion

The aims of this systematic review were to review the research evidence on the psychosocial determinants of oocyte donation and to explore oocyte donor's experiences of donation. A number of key issues emerged from the research syntheses including a number of distinct differences between patient, non-patient and potential donors on various factors relating to oocyte donation. Despite the hazards and discomfort of the oocyte donation procedure, the majority of donors have reported positive experiences of oocyte donation.

## Author's Role

Both listed authors (S.P. and Professor van den A.) have contributed significantly to all stages in the preparation of this systematic review.

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## Appendix 7.2 The socio-cultural and biological meaning of parenthood.

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### The socio-cultural and biological meaning of parenthood

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#### Abstract

Parenting a child is one of the most universal, common and fundamental assumptions the majority of men and women make from an early age about their future. This common and historic assumption was challenged in modernized Western societies in the 1960s with the opportunities for 'mass control' of reproduction and then again supported in the 1980s with the advance of 'mass enhancement' of reproduction. This study qualitatively assessed the meaning of parenthood of post modern British individuals of different ages, gender, cultural backgrounds and parity. The results of the Interpretative Phenomenological Analyses revealed a number of common ideologies about parenthood, and a number of specific age, gender, parity and cultural differences in how individuals interpret and experience parenthood. These individual differences play a significant part in the quality of life of people gaining or losing the opportunity to parent, as has been discussed 'around the globe' by Frank van Balen and his team, and must be considered in counselling people faced with decisions which challenge their personal and universal assumptions to parent a genetically related child.

**Keywords:** Parenthood motives, meaning of parenthood, gender, ethnicity, interpretative phenomenological analyses, qualitative

#### Introduction

Fertility trends in Western Europe have changed over the last few decades. Birth rates have been declining, with a rise in the number of people delaying parenthood and an increase in the number of couple's seeking assisted conception. In light of these changing trends and demands, early studies investigated the value of having children [1,2], and motivation for parenthood to be able to predict fertility trends in a rapidly changing and dynamic society. Research has since progressed from merely listing the values and costs of having children, to incorporating intentions and attitudes into parenthood decision making, not only to predict fertility behaviour but also to understand the motives of couples seeking infertility treatment [3].

A number of scales have been developed over the last three decades to assess the reasons or motives for parenthood (the terms 'reasons' and 'motives' have been used interchangeably by researchers to refer to the conscious thought or basis underlying the decision to have a child) [1,4,5,6]. Langdridge, Sheeran & Connolly [3], examined the reasons behind the intentions to have children. Building on their previous work, Langdridge et al. [7] surveyed white married

childless couples to further understand why they would or would not want to have a child, leading to the development of an 11-item scale. The scale included six reasons for parenthood (*fulfilment, please partner, make family, part of both of us, good home, his drive*) and five reasons against (*other things, restrict freedom, partner's wishes, interfere with career, over population*), and demonstrated good reliability.

However, any list of reasons or motives does not provide an insight into the contextual interpretations preceding an individual's arrival at their reasons; which are more important; what underlying experiential factors determine them, or the meaning attached to these reasons. Past studies have also made common and implicit assumptions that an individual possess a fixed attitude or belief towards parenthood and that quantitative measures will provide researchers with a measurement of participant's core beliefs and attitudes, which can then be predicted (e.g., 5,7). The need to evaluate this subject beyond categorical responses and beyond analyses of the verbal statements (through discourse analyses), is addressed in the present study through an interpretative determination of the subjective processes operating contextually. Since past research has also indicated there may be ethnic [2,8,9,10], gender [11], and age [12]

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differences in the desire for parenthood and differences between voluntary and involuntary childless couples are also evident [8,12], these factors are addressed in the present study. Interpretative Phenomenological Analysis (IPA) [13–16] was used so that the contextual meaning of differences between and within individuals could be delineated.

### Method

#### Participants

Men and women with and without children from White and Indian backgrounds, in their twenties to forties were recruited using the snowball sampling technique. This report presents the results of 13 participants (Table I). As can be seen from Table I, six participants were female and seven were male between 21 and 44 years of age (mean = 33 years). Eight participants described their ethnicity as Indian and five as White. Five participants had at least one child and eight participants had no children. The majority of the participants were married, the remaining were in long-term relationships (3) or were single (3). Two participants reported that they or their partner had had a miscarriage. No participants reported a diagnosis of sub-fertility. People under the age of 18 and people who could not speak in English were excluded from the study.

#### Procedure

Following local university ethical approval, informed consent was obtained for all participants prior to participation, and all were debriefed following the interview.

#### Data collection

In accordance with IPA tradition, interviews were conducted individually using the Reasons for

Parenthood items as a topic guide. The first author introduced the concepts and asked participants to construct individual meanings around these in relation to their own reproductive decisions, encouraging them to talk about reasons behind their decisions, past experiences and influences, which were then picked up and interpreted by the researcher and used to construct further probes. All interviews were tape recorded, and lasted between 30 and 90 minutes. Names were changed in the transcripts to protect the participant's anonymity.

#### Data analysis

Interpretative Phenomenological Analysis (IPA) [13–16] was used to interpret the interview transcripts. IPA allows a detailed exploration of the interpretations of social and psychological experiences or realities, and perceptions of participants. It is rooted in phenomenological inquiry and symbolic interactionism in understanding experiences and perceptions, and highlights the role of the researcher in the interpretative process in understanding the participant's world using an idiographic approach [17]. The idiographic approach involves in-depth analysis of participant's attempts to describe their cognitive and affective actions and reactions to the life experience they are facing (Smith, 2006, personal correspondence). This dualistic and dynamic approach was ideally suited and used to understand different people's discursive thoughts, changes in and reflections on responses, and ease of interpreting the meaning of parenthood.

Interviews were transcribed and initial thoughts and comments about themes and ideas that emerged from the transcripts and from reflection were captured on one side of the paper, and the other side was used to identify important themes through key words found within the transcripts. NU\*DIST (a program designed to facilitate qualitative data analysis) was used as an additional source to help categorize the

Table I. Demographics of participants

Name	Age	Gender	Ethnicity	Children	Failed pregnancies	Marital status
Neelam	24	Female	Indian	0	0	Long-term boyfriend
Sandeep	25	Female	Indian	1	0	Married
Balinder	24	Male	Indian	0	0	Single
Randeep	25	Male	Indian	1	0	Married
Kam	35	Female	Indian	2	1	Married
Pandey	43	Female	Indian	0	0	Married
Naveen	37	Male	Indian	0	0	Single
Maninder	39	Male	Indian	2	-	Married
Elizabeth	26	Female	White	0	0	Single
Nathan	21	Male	White	0	0	Long-term girlfriend
Jenny	44	Female	White	0	0	Divorced, now with long-term boyfriend
Jason	43	Male	White	2	1	Re-married
Stan	40	Male	White	0	0	Married

results. The transcripts were examined in NU\*DIST for recurring themes in participant's discourses of their thoughts and perceptions of the reasons for and against parenthood. The data was also checked and re-checked by the second author for consistency in clustering, aiding the interpretation process, ensuring full agreement was reached. The themes and accompanying data extracts were presented on a table and clustered together into related groups. This process was repeated for all transcripts so that all themes (and keywords) were coded individually and all emerging themes were compiled into a master table regardless of whether other transcripts revealed similar themes or not, so no data was lost. The master table was reviewed and the most important themes that emerged from the table, which were significant for the majority of participants were identified, and are described below.

## Results

### *Commonalities in thematic constructs across participants*

Five super-ordinate themes emerged; (i) parenting as selfless; (ii) the fulfilling role of parenthood; (iii) the importance of genetic ties; (iv) the importance of joint decision making; and (v) being prepared for parenthood – and four population specific themes (vi) age, (vii) parity, (viii) ethnicity and (ix) gender. These are discussed below.

**Selfless:** The commonest theme was the interpretation of parents as selfless beings, who sacrifice their own happiness and needs for their children. Interpretations were differentiated between those who were willing to be selfless and those who were not. For example, parous participants described their lives centring on the child and their own needs and desires coming second or not at all (see Randeep and Manjinder's quotes), whereas nulliparous participants described themselves as being too 'selfish' to have children in the past or at the present (see Jenny below).

You're doing something for someone that's meaning in life. You're not just thinking about yourself or your partner, you're thinking about a child now. (Randeep, 3)

... Erm it's not about you any more, it about somebody else. Yeah so in that sort of sacrifice, you can't do the things I would be doing beforehand, erm being individualist and only worrying about me. Whereas, now your focus is more on somebody else. (Manjinder, 3)

Jenny did not want children, her reasons were:  
"J: Probably purely selfish reasons really.

I: What were your selfish reasons?

J: Erm because I just wanted to do what I wanted to do and I felt the responsibility of children would probably hold me back. (Jenny, 2)

**Fulfilling:** All participants agreed that having a child would be 'fulfilling'. A range of constructs emerged, the most common clustered interpretations were 'to nurture', 'pass on knowledge' and that parenthood would be a 'rewarding experience'. These emerging clusters were interesting because with the exception of 'love' and 'leave something behind', all centred strongly on enjoying the role of parenting without any specific mention of qualities of the child (genetic relatedness) and surprisingly little reference to the child itself, contradicting the selflessness concepts somewhat.

Because you could sort of erm teach them what you know, sort of manners and bring up somebody that [...] right for society and things really. ... I'm working with kids all the time and some children that I think that erm haven't got that and it would be nice if had somebody that taught them and guided them through properly. (Neelam, 1)

Neelam hesitantly tried to emphasize a sense of achievement she would have if a child turned out well, by using examples external to herself (society, work), whilst clearly believing she could teach/guide them with proper manners.

**Bio Drive/Genetic link:** Most participants demonstrated ambivalence and confusion towards *Biological Drive* as a reason for parenthood, incorporating denial on the one hand, and discourses such as a desire to have a child that is 'part of them and their partner'; a 'strong preference to have their own child rather than adopt or use sperm/ovocyte donor' and a 'belief that they would be able to 'bond' with the child better or 'relate' to the child more if the child was biologically/genetically related to them'. For example, Nathan denied a biological drive had any bearing on his reproductive decision making. He believed a biological drive referred to fulfilling an instinctive need which would need satisfying, and that evolutionary and cultural developments have overridden primitive biological needs.

I suppose it's hard to say because you don't wake up one morning and think I have an enormous biological drive to have some children or eat a sandwich or something like that. (Nathan, 3)

He also argued that having a child would be fulfilling because he could 'leave someone behind after you've gone' demonstrating a recurrence of the importance of a genetic link emerging theme.



I: *In what ways do you think it would be fulfilling?*

N: Just to bring life into the world and you know, I think it's a way of leaving your mark in a way, I suppose in a way, I don't really know.

I: *What do you mean by leaving your mark?*

N: It's just nice to leave someone behind after you've gone kind of thing.

(Nathan, 3)

Since many participants constructed parenthood as selfless and altruistically motivated, it may have been difficult for them to acknowledge a preference for a genetically related child because it would assume they had self-centred interests in having children. When Kam was first introduced to *bio drive* as a possible reason for wanting to have children in the interview, her response was flippant, however when further probed she became evidently more uncomfortable and frustrated with this topic. Her response was strained and there was a clear shift in her tone and rhythm of speech.

I: *Is that [bio drive] a reason why you decided to have kids?*

K: [...] I suppose and I'll be vague on this answer. Ask me something different, ask me something I can answer.

I: *[Laughs] But I want to ask you about this. Erm why was it important to you then to have children that were part of... you? How does that make a difference?*

K: *[Speaks quickly]* Well it's poor having kids that have come from somewhere else when I can have my own. As much as you love having around everyone else's kids, but if there not your own, by the end of the day they'll go home to where they belong. So, it's not the same is it?

I: *Would you ever consider adoption?*

K: No.

(Kam, 2)

**Joint decision:** A recurring, clustered discourse that emerged from several individuals concerned the importance of a Joint Decision in deciding to have a child. 'Having (or not having) a child to please your partner' was considered a wrong and inappropriate reason for parenthood. The fear of jeopardizing the relationship between the couple or/and child appeared to be the most important factor underlying the need for a Joint Decision in deciding to have/not to have a child.

Having a baby is very much a two way thing, if one partner doesn't want a baby then erm it can create many problems thus can't it? ... and if one of you doesn't, then the partnership gonna fail because the partnerships got no where to go. (Jason, 3)

**Preparedness:** Most participants did not consider the 5 reasons against parenthood as important or relevant, and found discussing them difficult. However, they did strongly argue that they would only have a child when they were 'ready' to have children. All nulliparous participants said they would only have a child once they were mentally prepared for it, and could provide the child with a good home, stable environment and support the child emotionally and financially.

... I wouldn't have a child now because I wouldn't be able to give it a good home. ... I don't have a house now so it be a reason why I wouldn't have a child now. But I presume if I would ... once I have like secure setting and stuff like that, then it would be, I would have a child. (Elizabeth, 1)

There were also some distinct differences in participant's discursive thoughts about the reasons for and against parenthood and in their interpretation of parenthood constructs depending on participant's age, parity, culture and gender.

**Age:** Young, nulliparous participants had idealized and romantic views about raising children and the joys of parenthood.

... a child someone we both care and it's ... and it be a big part of us. So yeah for sure ... Yeah because we love each other, it'll be a symbol of our love (Young 3)

**Parity:** Parous and nulliparous older participants also agreed that *part of both of us* was the most important reason for having children, although their language and underlying discourses were based on interpretations from life experience, lacking in younger, nulliparous participants reflecting a grounded and somewhat more realistic assessment of the child's contribution to their marital relationship.

Hmm I would be wary of that as a reason for having kids erm while it's actually correct to say yeah kids are part of both of you erm it's just to my mind sounds like it's being used as a erm I dunno like something to fix a relationship that's not terribly great you know? Or maybe someone's feeling insecure and they go 'oh well if we've got this things and it's a part of both of us then it'll make me feel more secure he or she won't run off' or it seems almost like a sucking plaster you know to say that to my mind. (Sam, 3)

Subtle differences in interpretations of the importance of *part of both of us* were also apparent with nulliparous individuals stressing the genetic tie, whereas older parous participants, for example, being more matter of fact:

I mean I understand that the child is made from two people, but I don't think it would erm it's doesn't hold that much significance for me (Sandeep, ♀)

**Ethnicity:** Only two White participants indicated that the reasons against parenthood were relevant to their own reproductive decisions; Jenny and Stan; White voluntary childless participants in their forties.

...I wanted to continue with travel and career... my husband didn't want any more children although he got four children from his previous marriage. So I respected his decision (Jenny, ♀)

...it's just not something that's really appealed to me... there's loads of other things I wanna do, you know just get on and do other things (Stan, ♂)

However, when probed about their decision to remain voluntarily childless, they gave mixed responses and behaved less confident. Although, both believed they had made the right choices in life, Jenny expressed feelings of regret and resentment because her ex-husband went on to have more children within another relationship and Stan spoke about being open to persuasion, if his partner decided to have children

I: Do you regret that decision [not to have children]?  
J: I do now, knowing what I know now, it's because we've spilt up he's [ex-husband] now had another child... I do regret that but you know that's me. (Jenny, ♀)

I'd be more open to the idea of having kids if I was with a partner who was younger and really wanted them, I can probably be persuaded. (Stan, ♂)

Unlike Stan and Jenny, the majority of South Asian participants believed children were the most important things in life and they struggled or refused to think of other things in life which could be just as, or more important.

What other things can there be more than having a children really?... because as far as the notion what could be more important: Money? Car? Home?... Luxury? Erm which are all materialistic really... so I think that's wrong. There won't be no other reasons really, you get me? (Baljinder, ♂)

South Asian males also asserted that the continuation of their family name and line through the *genetic link* was a focal reason for wanting to have children. None of the females and only one White male (Nathan) in the sample suggested such a link or mentioned the importance of continuing the family lineage.

Erm again it's it's the life cycle. So, carries on your family's name [...] in the future, if you die then that's it your family name stops. (Naveen, ♂)

However, it is possible that White individuals believed it was unacceptable to say they would prefer their own genes above those of others, resulting in a proportion not talking about it because unlike Asian men, they could not use 'the cultural expectation of a blood line' as a hook to hang the desire for a genetic link on. For example, Baljinder discussed the importance of a genetically related child in context of Asian tradition where children are expected to care for their elderly parents.

... because in our culture my parents have looked after me and it's my turn to look after my parents, so it will be the same concept with me. When I'm 40, my kids will be 20 and he'll look after me as I'm getting older. (Baljinder, ♂)

**Gender:** Nearly all women in the sample identified with the concept to *make a family* as a good reason for parenthood. There was a strong consensus that 'children make a family'. Particularly for women, having children would 'complete', 'extend', 'enhance' 'make whole' their family. The overwhelming emerging themes underlying *to make a family* was that women felt that children would bring something into their family which is currently missing, and help to 'complete' their family.

I like to have an extended family like that... like it would be mine and my partner's or like my parents can have grandchildren, it will just make the family bigger and be a part of you. (Neelam, ♀)

In contrast, some men were suspicious of this reason, particularly Stan, who argued that this reason may be used by women to manipulate men into relationships. Stan appeared to feel insecure in his interpretations of women's needs.

...sounds to me a bit like it's it's trying to fix something that isn't quite right... erm I suppose that comes from just like erm perhaps watching things on telly or reading things in newspapers where you get that impression of that's what some woman have done as they they they have kids because it make the bloke stuck around or something you know that kind of manipulation. (Stan, ♂)

## Discussion

This study set out to determine how different individuals perceived and interpreted parenthood and how their individual and social context shaped these interpretations and constructs. Participants

shared a common belief that parenthood was desirable, natural, and represented an image of selflessness and sacrifice consistent with previous quantitative studies [1-6].

A number of key issues emerged; Self disclosure was easier when individuals discussed socially accepted normative interpretations of parenthood – sharing idealized notions of parents as 'selfless' beings who sacrifice, nurture and guide. This idealized notion of (selfless) parenthood has been observed by other authors [18,19], and appears to indicate a collective construction of parenthood which advocates the desirability of having children and the socio-culturally perceived positive attributes of being a (giving or selfless) parent, rather than (self focused) fulfilling internal or external needs.

However, discussions were more strained, complicated and even contradictory when participants discussed their own personal position on concepts allied to self interest – as in the genetic link, or the manipulation of instinct over reason. A genetically related child was a preferred child. However, it is also possible, that participants were making assumptions that a child would be genetically related to them, because they did not have a need to construct a reality based on non genetic offspring as has been discussed in other research [20], and is shown by Kam's discomfort in discussing a genetic link.

Young people and women's interpretations of motherhood were influenced by romantic images, and women also perceived the meaning of fulfillment as having more positive depth than males. Women were more likely to be fulfilled with than without a child, showing how their identity as women continues to hinge on motherhood supporting other research in traditional [2] and modern women [5,21,22]. Young individuals interpreted parenthood as a special and unique bond between parent and child and as a unifying symbol of the couple's love and affection for each other. For example, they consistently and passionately discussed the symbolic significance of having a child which is 'part of both of them', as a genetically linked child and the perception that a child would bring them closer together, also found previously [2], particularly in younger women [12].

The different interpretations of having children as part of both of us, or as important from a relationship point of view between parous and nulliparous individuals mirrors recent explorations of the importance of a genetic link in infertile participants. van den Akker [20] suggests that infertile people are faced with genetic link choices which they have to interpret within the harsh reality of the most feasible option to overcome childlessness (which may consist of 3rd party involvement). They need to cognitively re-structure how they perceive the constructs of motherhood and fatherhood, by constructing new realities

[23]. Fertile people, on the other hand, do not see a genetic link in the same way, because their life experiences have not provided a need to '(re)consider' its importance. Consequently previous research reports the importance of a genetic link differently, depending on the contextual differences in which the questions are asked.

Decisions to remain childless were limited to White participants and were explained within the context of changing priorities (lack of control – Jenny; world views – Stan) over time. For example, they described that when they were younger, there were other important things in life, they feared a child would restrict their freedom or interfere with their careers (indicating their need at the time to be in control, and inability or unwillingness to be selfless), and in Jenny's case (a concomitant lack of control demonstrated by her additional explanation), the partner does not or did not want a child and Stan was additionally concerned with over population. These discourses provided an excellent example of the limitations of the common interpretations of some (but not all) quantitative observations. For example, attitudes against parenthood need to be interpreted as one 'being able to imagine' the concept of wanting, not wanting children, set within the context of one's own experiences, cognitions, social demands and ability or willingness to change one's position on parenthood. However, in support for quantitative measurement in assessing parenthood desires, many participants were also quite clear and confident in their reasoning behind their decision to have or not have a child. Participants were able to articulate clearly which reasons they believe were relevant or irrelevant in their reproductive decision making process.

South Asian participants responded with a sense of socio-cultural identity prevalent even amongst second generation British South Asians. Within South Asian communities, lineage and genetic or blood links are necessary elements of the South Asian culture which most wish to maintain and part take in. Their negative and unfamiliar interpretation of the voluntarily childless theme is consistent with Culley et al.'s [8] work who reported that within the South Asian community, parenthood was considered to be mandatory and children were highly valued. Both our results and Culley's demonstrate that for South Asians, life without children is undesirable as they are the most important thing in their lives. White participants (irrespective of parity), although also bound by some socio-cultural values advocating the virtues of childrearing on the other hand, were generally more likely to explore the idea that there could be other important things in life.

Van Rooij et al. [10] reported that Turkish men and women living in The Netherlands, continued to value culturally specific reasons for parenthood,



including (for men) the importance of the continuation of the family name and line. These values, though traditionally also prominent in White Western populations, have become less overtly pressing, in modern societies coincidental with a decline in adherence to traditional religious practices [24], practices *not* declining in South Asian populations. The cultural differences of the reasons for parenthood with South Asian participants asserting unequivocally that children were the most important thing in life, and emphasizing the continuation of their family name, highlights the trends Frank van Balen set [25] on the social importance of children in other ethnically and culturally diverse communities. These contextual interpretations of reasons for parenthood could assist counsellors working with couples whose parenting prospects may be challenged. The counsellor could focus on cognitively restructuring previously held beliefs and values which were specific to the individual's life position including their age, gender, and socio-cultural normative values.

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**Current knowledge on this subject**

- Current empirical understanding of the reasons for parenthood is limited to quantitative research designs.
- Individual differences in reasons for parenthood within and between populations have been relatively unexplored.
- The changes in fertility trends and sophistication of reproductive technology require a contemporary understanding of the meaning of parenthood for post modern British individuals.

**What this study adds**

- Interpretative Phenomenological Analyses was a useful method of providing an insight into the contextual interpretations preceding an individual's arrival at their reasons or the meaning attached to these reasons.
- Universal and population specific themes emerged, demonstrating differences which were age, gender and culture related.
- These contextual interpretations of reasons for parenthood could assist counselors working with couples whose parenting prospects may be challenged.



### **Appendix 7.3 Attitudes and Intentions towards Volunteer Oocyte Donation**

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## **Abstract**

There is an acute shortage of donated oocytes in the UK, and clinics are largely relying on egg share oocytes. Egg share donation of oocytes is not without its ethical and moral concerns. The aims of this study were therefore to investigate non-patient population attitudes towards oocyte donation and examine the link between oocyte donation intentions and reasons for parenthood using Structural Equation Modelling (SEM). The survey population consisted of 349 ( $M = 27.8$ ,  $SD=4.7$ ) women. Results revealed that approximately one third of women would consider donating their oocytes as identifiable donors. SEM analyses indicated a significant direct effect of positive attitudes towards oocyte donation, high levels of social support and endorsement of less conventional reasons for parenthood to intentions to donate. Age, education and attitudes towards the importance of a genetic link between parent and child indirectly influenced intentions to donate oocytes. Intender's less conventional perceptions of parenthood coincided with their positive beliefs about the importance of parenthood and children. Thus, results indicated that attitudes towards parenthood are an important factor underpinning the motivation for potential oocyte donation.

**Key Words:** Oocyte Donation; Theory of Planned Behaviour; Third Party Conception; Infertility

## **Lay Summary**

There is an acute shortage of donated eggs in the UK, and fertility clinics are relying on egg share oocytes. Egg share donation refers to infertile patients donating a proportion of their eggs in return for cheaper fertility treatment and this is not without its ethical and moral concerns. The aims of this study were therefore to investigate women's attitudes towards egg donation and examine the link between egg donation and reasons for parenthood. A total of 349 women completed the survey. Results revealed that approximately one third of women would consider donating their eggs. The findings also found that having positive attitudes towards egg donation, having support from friends and family to donate eggs and believing in less conventional reasons for parenthood were associated with willingness to donate eggs. Intender's less conventional perceptions of parenthood matched their positive beliefs about the importance of parenthood and children. So, results indicated that attitudes towards parenthood are an important factor underpinning the reasons for potential egg donation.

## Introduction

There is an acute shortage of donated oocytes in the UK (Ahuja & Simons, 1996; HFEA, 1998, 2006; Murray & Golombok, 2000) and globally (Blyth & Frith, 2008). Some clinicians and researchers are also concerned that the removal of donor anonymity in a number of European countries (such as Sweden, the Netherlands, Austria, Switzerland, Norway, and the UK), may inadvertently result in further reductions in the number of oocyte donors (e.g. Craft *et al.*, 2005; Pennings, 2005). The scarcity of donors is a major concern and in countries such as the UK, oocyte share models have been set up in clinics whereby infertile patients donate their oocytes in return for subsidised fertility treatment in order to meet the increasing demands for oocytes (Ahuja & Simons, 1996; Ahuja *et al.*, 1998, 1999), and this is far from ideal. The psychological factors underlying a woman's intention to donate under current legislation, therefore needs to be investigated and understood.

To address the general shortage of volunteer oocyte donors, a few studies have examined various factors that may influence women from the general population's decisions to donate. Overall, these studies have found that although attitudes towards oocyte donation are positive (Lessor *et al.*, 1990; Bolton *et al.*, 1991; Kazem *et al.*, 1995; Lyall *et al.*, 1995; Westlander *et al.*, 1998; Kailasam, Sykes & Jenkins, 2001; Urdapilleta, Chillik & Fernández, 2001; Chliaoutakis, 2002; Chliaoutakis, Koukouli & Papadakaki, 2002; Skoog-Svanberg *et al.*, 2003; Isikoglu *et al.*, 2006; Khalili, Isikoglu & Ghasemi, 2006; Purewal & van den Akker, 2006; Brett *et al.*, 2008), intentions to donate oocytes remain low. Some of the factors that do appear to influence non-patient women's intentions to donate are experiences of fertility problems (Kazem *et al.*, 1995); low levels of religiosity (Chliaoutakis, 2002; Chliaoutakis *et al.*, 2002); and the perceived unimportance of genetic ties between parent and child (Skoog-Svanberg *et al.*, 2003; Purewal & van den Akker,

2006). Altruism has also been suggested as a motivator (Skoog-Svanberg *et al.*, 2003; Brett *et al.*, 2008), but not always (Purewal & van den Akker, 2006).

Attitudes towards the desire and importance of mother/parenthood are additional factors as reported in studies of actual oocyte donor's decisions to donate (Ahuja *et al.*, 1998; Raoul-Duval, Letur-Konirsch & Frydman 1992; Weil *et al.*, 1994; Snowdon, 1994; Kalfoglou & Gittelsohn, 2000; Beatens *et al.*, 2000; Byrd, Siderbotham & Lieberman, 2002; Kirkman, 2003; Winter & Daniluk, 2004; Yee, Hitkari & Greenblatt, 2007), but these associations have not yet been studied with potential donors. Oocyte donors have also been found not to believe in the importance of a genetic link between parent and child (Weil *et al.*, 1994; Ahuja *et al.*, 1998; Beatens *et al.*, 2000; Byrd *et al.*, 2002; Kirkman, 2003; Winter & Daniluk, 2004) and have been found to endorse non-traditional sex role beliefs and behaviours (Schover *et al.*, 1991; Klock, Stout & Davidson, 1999, 2003; Riddle *et al.*, 2003). The procedure and symbolic significance of oocyte donation challenges traditional views of parenthood and conception (van den Akker, 2001), because donors allow other women to raise children born from their genetic material and participate in the creation of an unconventional, non-genetic family. It is possible therefore that oocyte donors, who have been shown to endorse less traditional sex role beliefs and behaviours (by participating in the creation of an unconventional family), may also have less conventional or normative perceptions of parenthood. This study therefore investigates whether women willing to donate their oocytes have unconventional and non-normative reasons for parenthood.

In addition, there is a general lack of theory based research in the oocyte donation literature (van den Akker, 2006), and this study also aims to address these limitations. To the author's knowledge, the Theory of Planned Behaviour (TPB) (Ajzen, 1985, 2002) has been

the only health psychological model applied to oocyte donation. According to the TPB, *Attitudes towards the behaviour* (beliefs about the consequences of a behaviour and positive or negative judgements about performing the behaviour), *subjective norms* (beliefs about how important people would support them) and *perceived behavioural control* (extent to which a person feels they can perform the behaviour) predict intentions to perform a given behaviour. Indeed, past research has found that the TPB successfully differentiated between women who were willing, unwilling or unsure to become oocyte donors (Skoog-Svanberg *et al.*, 2003) and successfully predicted donation intentions for treatment (Purewal & van den Akker, 2006) and research (Purewal & van den Akker, 2009). Thus, based upon previous work, this study hypothesises that components of the TPB and endorsement of unconventional reasons for parenthood would have a direct influence on oocyte donation intentions. In doing so, this study also measures general attitudes towards oocyte donation under current legislation and examines factors that influence women's intentions towards oocyte donation, in an attempt to inform recruitment practices. Specifically, this study builds on previous work using structural equation modelling (SEM), which has never been applied before in the oocyte donation literature. As SEM is a statistical technique used for theory testing (Bryne, 2001), it was appropriate in evaluating the application of components of the TPB and attitudes towards parenthood to oocyte donation.

## **Materials and methods**

A questionnaire design was used. The English translated version of the Attitudes towards oocyte donation scale (Skoogs-Svanberg *et al.*, 2003, which was validated in a previous UK study – Purewal & van den Akker, 2006) and the Reasons for Parenthood Scale

(Langdrige, Sheeran & Connolly, 2005) were used to assess attitudes and intentions to donate oocytes and women's reasons for and against parenthood, respectively.

The translated Attitudes towards oocyte donation questionnaire included 11 subsections (the five italicised subsections were used to test the theoretical components of the TPB). The respondents rated each item on a five point Likert-type scale that ranged from strongly agree (5) to strongly disagree (1) and included a 'cannot form an opinion' (0) option. Scores from individual items were later summed to create a total score for different subsections. A high score represented positive attitudes and low score represented negative attitudes. Individual subsections are described below.

On the Attitudes towards oocyte donation questionnaire, the 'Attitudes towards the importance of children' subsection (six items,  $\alpha$  .67) assessed the perceived importance of parenthood (sample item: Having children is the most important thing in life). 'Attitudes towards the importance of a genetic link between parent and child' (four items,  $\alpha$  .74) measured the perceived importance of genetic ties (sample item: The genetic link between mother and child is important). Further, 'Attitudes towards disclosure to offspring' (six items,  $\alpha$  .66) assessed attitudes towards the disclosure of genetic origin to donor child (sample item: Children conceived through egg donation should have the right to know about their genetic origin). The 'Attitudes towards specific circumstances in the procedure of oocyte donation' subsection (six items,  $\alpha$  .39) evaluated attitudes towards specific issues relating to oocyte donation policy and clinic recruitment practices (sample item: Women who undergo test-tube fertilization should be asked to donate their remaining eggs). 'Attitudes towards a recruitment advertisement' (four items,  $\alpha$  .93) on the other hand assessed hypothetical responses to an oocyte donation advertisement (sample item: Would you attend an information meeting?). The 'Attitudes towards factors that would induce

women to donate' (12 items,  $\alpha$  .75) subsection measured whether specific factors (such as convenient clinic locality) could induce women to donate (sample item: You could get counselling?).

There were five subsections on the attitudes towards oocyte donation questionnaire which measured components of the TPB. Specifically, '*Attitudes towards oocyte donation in general*' (five items,  $\alpha$  .77) was one of the two 'attitudes' components of the TPB that assessed positive or negative judgements about oocyte donation (sample item: Egg donation is a good way to help childless couples). Whereas, '*Attitudes towards the consequence of oocyte donation*' (seven items,  $\alpha$  .66) measured beliefs about the personal and social consequences of donating oocytes and was the second 'attitudes' component of the TPB (sample item: Would you be happy about helping a couple that is unable to have children by other means). '*Subjective norms*' (one item) assessed social support in deciding to donate oocytes (item: The important people in my life would support my decision to donate eggs) and '*Perceived behavioural control*' (one item) measured the extent to which a woman feels she can donate her oocytes (item: It is entirely up to me whether or not I want to donate an egg). Finally, '*Intention to donate*' (one item) measured behavioural intentions and all participants were informed of the removal of donor anonymity (item: Could you see yourself donating eggs at some point in the future). The Intention to donate item was used as the grouping variable to analyse the results; respondents were classified as 'intenders' (yes group), 'possible intenders' (maybe/don't know group), and 'non-intenders' (no group). The Cronbach's alpha for the majority of subsections were deemed satisfactory, however one subsection (Attitudes towards specific circumstances in the procedure of oocyte donation  $\alpha$  .39) demonstrated a low degree of consistency.



The second questionnaire was the Reasons for Parenthood scale, developed by Langdridge *et al.* (2005) using a survey of 897 White married childless couples to understand why they would or would not want to have a child, leading to the development of the 11 items scale. The scale included six reasons for parenthood (fulfilment, to please partner, make family, part of both of us, good home, and biological drive) and five reasons against (other things, restrict freedom, partner's wishes, interfere with career, and concern over over-population). After reviewing the literature, a further four items were included in the reasons for parenthood (to carry on family name, religious beliefs, genetically part of me and confirm femininity) and one item was included in reasons against parenthood subscale (unwanted changes) (reasons *for* parenthood  $\alpha$  .88 and reasons *against* parenthood  $\alpha$  .88). The respondents rated each item (e.g. 'My partner would be pleased if I had a child') on a five point Likert-type scale that ranged from relevant (5) to irrelevant (1) on their relative importance in the respondents reproductive decision making process. All ten reasons for and six reasons against parenthood items were later summed to create a total score for reasons for and reasons against subscale which was used in data analyses. Items on the reasons for parenthood scale reflect dominant and normative reasons for wanting to have children (Langdridge, 2008, personal correspondence), so a high score was indicative of supporting normative and conventional reasons for wanting to have children, whereas a low score was indicative of supporting non-normative and less conventional reasons.

The Questionnaires were developed online and specific websites (list available upon request from authors) were targeted which were more likely to attract women visitors than men. Certain websites emailed their members inviting them to participate in the study, whereas other websites advertised the link to the questionnaire to their webpage. A link to the online questionnaire was also attached to the email signatures of the authors, and emails inviting University staff and students were also sent off. A number of respondents

had also completed the questionnaires after finding it through Internet search engines. Ethical approval was granted by the local university ethics committee and informed consent was implied by the completion and submission of the questionnaires.

## Results

Data of three hundred and forty nine respondents who were 35 years of age or younger ( $M = 27.8$ ,  $SD=4.7$ ) are reported here (35 is the general upper age limit that clinics accept for oocyte donation). Of the total sample, the majority were White (89.7%), 122 (35.0%) had at least one child, 59 (16.9%) had a termination in the past and 62 (17.8%) had miscarried. Just over half (58.2%) had obtained higher education. Unfortunately, not all demographic information was obtained for all participants because some additional demographic questions were included in the questionnaire later. So, out of 170 who provided all information, 27 (7.7%) reported having a fertility problem and 13 (3.7%) reported their partner had a fertility problem. Furthermore, 137 women (39.3% of 218) reported being in a long term relationship. A total of 242 respondents were recruited from websites; 62 from a university; 15 women had completed the questionnaires after finding them through search engines and 30 women were recruited from unknown sources.

### *Intentions to donate*

Of the 349 respondents, 126 (36.1%) were potentially intending to donate in the future ('intenders'), 122 (35.0%) reported maybe or don't know ('possible intenders') and 101 (28.9%) were unwilling ('non-intenders').

### *A comparison of socio-Demographic characteristics*

There were significant differences in age between the three donor groups ( $F(2, 348) = 3.88$ ,  $P < 0.022$ ) and Student Newman-Keuls (SNK) post hoc analyses revealed that intenders and possible intenders were significantly older than non-intenders (see Table 1). There were no differences between intenders, possible intenders or non-intenders on marital status ( $\chi^2 = .48$ , d.f. = 2,  $P > 0.05$ ) or socio-economic status ( $\chi^2 = 4.38$ , d.f. = 2,  $P > 0.05$ ). Non-intenders were significantly more likely to be nulliparous ( $\chi^2 = 24.31$ , d.f. = 2,  $P < 0.001$ ) compared to possible intenders and intenders. Intenders were significantly more likely to have experienced a miscarriage ( $\chi^2 = 8.67$ , d.f. = 2,  $P < 0.013$ ), termination ( $\chi^2 = 10.06$ , d.f. = 2,  $P < 0.007$ ), and were less educated ( $\chi^2 = 24.65$ , d.f. = 2,  $P < 0.001$ ) compared to possible intenders and non-intenders. Whereas, possible intenders and intenders were more likely to report a fertility problem ( $\chi^2 = 12.76$ , d.f. = 4,  $P < 0.01$ ) than non-intenders.

#### *Attitudes towards Oocyte Donation*

Table 2 shows the donor group means on the Attitude towards oocyte donation questionnaire. Analysis of Variance (ANOVA) (using SNK contrasts) revealed that intenders had significantly more positive 'attitudes towards oocyte donation' ( $F(2,348)=68.56$ ,  $P < 0.001$ ) and perceived the 'consequences of oocyte donation' more favourably ( $F(2,348)=96.09$ ,  $P < 0.001$ ) than possible intenders, who in turn, were more positive than non-intenders. Intenders and possible intenders reported significantly more negative 'attitudes towards disclosure of genetic origin to offspring' ( $F(2,348)=4.39$ ,  $P < 0.01$ ) and were significantly more favourable towards 'factors that would induce women to donate' ( $F(2,348)=22.36$ ,  $P < 0.0001$ ) compared to non-intenders. Intenders also demonstrated significantly more positive 'attitudes towards recruitment of oocyte donors' ( $F(2,348)=173.18$ ,  $P < 0.0001$ ) and the 'importance of parenthood' ( $F(2, 348) = 7.91$ ,  $P < 0.0001$ ) than possible intenders, who were significantly more positive than non-intenders. Whereas, intenders and possible intenders were more positive about 'attitudes

towards specific circumstance in the procedure of oocyte donation' ( $F(2,348)=22.35$ ,  $P<0.0001$ ) and negative towards the 'importance of a genetic link between parent and child' ( $F(2,348) = 9.19$ ,  $P<0.0001$ ) compared to non-intenders.

### *Reasons for Parenthood*

There were no significant differences between the groups in their intention to have a child in the future. However, intenders were significantly less likely to score highly on the reasons *for* ( $F(2, 348) = 10.35$ ;  $P<0.0001$ ) and *against* parenthood ( $F(2, 348) = 8.95$ ;  $p<0.0001$ ) (see figure 1) compared to possible intenders or non-intenders, thus reflecting less conventional reasons for wanting to have children compared to the other donor groups. SNK contrasts revealed there were no significant differences between possible and non-intenders.

### *Structural Equation Modelling Summary*

Fig 2 presents the structural equation model (SEM). According to the model, three components of the TPB; namely positive 'Attitudes towards oocyte donation'; positive 'Attitudes towards the consequence of oocyte donation'; and 'Subjective norms' ( $\beta = .790$ ,  $P<0.001$ ) directly predicted the intention to donate ('Perceived behavioural control' did not feature in the model). According to the model, reasons for parenthood ( $\beta = -.014$ ,  $P<0.001$ ) were inversely related to intentions, which means endorsing less conventional reasons for parenthood predicted intentions to donate. Age, education and 'Attitudes towards the importance of a genetic link between parent and child' interacted with other variables and had an indirect effect on intentions. Specifically, age directly influenced TPB components ( $\beta = .025$ ,  $P<0.007$ ) and inversely influenced 'Attitudes towards the importance of a genetic link' ( $\beta = -.086$ ,  $P<0.05$ ), whereas education inversely interacted with TPB.

components ( $\beta = -3.20$ ,  $P < 0.001$ ) and no other variables. 'Attitudes towards a genetic link' had a direct influence on reasons for parenthood ( $\beta = .954$ ,  $P < 0.001$ ). The model accounts for 63% of the variance in the intention to donate and the overall fit of the model was good, with  $\chi^2 = 22.92$  (d.f. = 18,  $P = .19$ ) and fit indices of 0.984 for GFI, 0.991 for CFI, 0.961 for NFI, 0.028 for RMSEA, 58.923 for AIC and 146.314 for CAIC. No direct interaction between reasons for parenthood and TPB components were identified. Further, models which included sub-sections of the attitudes towards oocyte donation, other socio-demographic variables or components of the TPB as separate predictors did not yield a good fit.

## Discussion

### *Characteristic Profile*

Women intending to donate their oocytes tended to be older, parous, had a termination or miscarriage in the past and had less education compared to other women of childbearing ages, confirming previous reports on actual oocyte donors (e.g. Power *et al.*, 1990; Schover *et al.*, 1991; Kirkland *et al.*, 1992; Sauer & Paulson, 1992; Rosenberg & Epstein, 1995; Söderström-Anttila, 1995; Khamsi *et al.*, 1997; Kan *et al.*, 1998; Klock *et al.*, 1999, 2003; Beatens *et al.*, 2000; Kalfoglou & Gittelsohn, 2000; Kalfoglou & Geller, 2000; Byrd *et al.*, 2003; Winter & Daniluk, 2004; Yee *et al.*, 2007). In addition, the structural equation model revealed that age and lower education contributed to the intention to donate through directly influencing other variables in the model, namely components of the TPB and attitudes towards a genetic link.

### *Removal of Donor Anonymity*

Skoog-Svanberg *et al.* (2003) reported 17% ( $n=120$ ) of their Swedish sample would consider donating. More recently, Brett *et al.* (2008) found that 43% ( $n=18$ ) of a small

sample of UK women under the age of 35 would consider donating their oocytes as identifiable donors, whereas, we found 36.1% ( $n=126$ ) of UK women eligible for donation reported an intention to donate. Thus, despite changes in legislation leading to fears that the removal of donor anonymity in 2005 would further jeopardise oocyte donor recruitment attempts (e.g. Craft *et al.*, 2005; Pennings, 2005), a significant minority of women would continue to consider donating their oocytes as identifiable donors. This is reassuring because of reports of a general shortage of oocyte donors across Europe including the UK (HFEA, 1998; Murray & Golombok, 2000; Blyth & Frith, 2008). Nevertheless, although encouraging, it is unlikely that 30% of the population sampled will actually proceed to donate their oocytes. The TPB (Sheeran, 2002) and donation literature (Radecki & Jaccard, 1999) on intention-behaviour relationships suggests that an intention reported by participants under research conditions does not often translate into actual behaviour. However, it is important to note that Fusillo & Shear (2007) found 89% of their previously anonymous donors would donate again even if they were no longer anonymous.

### *Theory of Planned Behaviour*

One of the aims of this study was to apply and test the utility of components of the Theory of Planned Behaviour (TPB) in relation to oocyte donation using SEM, since hardly any theoretical framework has been applied to explain gamete donation behaviour (van den Akker, 2006). The majority of the hypotheses derived from the TPB were supported in the SEM analyses, confirming previous work in oocyte donation for treatment, (Skoog-Svanberg *et al.*, 2003; Purewal & van den Akker, 2006), oocyte donation for research (Purewal & van den Akker, 2009) and surrogacy (Poote & van den Akker, 2008). There is an acute shortage of donated oocytes in the UK (HFEA, 1998; Murray & Golombok, 2000) and any successful campaigns to recruit more oocyte donors depends on understanding

factors that influence women's decision to donate. The TPB has demonstrated it has the potential to inform recruitment practices and tailor clinical services. Recruiting clinics could emphasise changing social cognitions and educating women about the perceived benefits of oocyte donation. Further, peer and family support should be targeted and encouraged in appeals and education leaflets.

It is important to note that although the Attitudes towards oocyte donation questionnaire (Skoog-Svanberg *et al.*, 2003) has been successfully replicated [i.e. Purewal & van den Akker, 2006], the questionnaire does have some limitations which should be acknowledged. The scale only had one item measuring perceived behavioural control and one for subjective norms. Finally, although most sub-sections of the questionnaire demonstrated good internal consistency, not all did (Attitudes towards specific circumstances in the procedure of oocyte donation). Thus, results for that subsection should be interpreted with some caution. Despite these limitations, this questionnaire represents real progression in oocyte donation research through its ability to apply a theoretical perspective towards oocyte donation intentions. However, a major limitation of the TPB is the exclusion of emotion in the model to explain behaviour (see Ajzen, Brown & Carvajal, 2004 for more information), particularly in relation to a potentially emotion invoking behaviour such as oocyte donation. This may also explain why, in this study, TPB and socio-demographic variables alone were not able to adequately explain why women do or do not donate. As we have shown, another important factor that needs to be taken into account is women's feelings and beliefs towards parenthood.

#### *Parenthood and Oocyte Donation*

Another aim of this study was to assess whether attitudes towards parenthood was a factor in women's decision to donate oocytes because although previous research has found

altruistic (Power *et al.*, 1990; Schover *et al.*, 1991; Söderström-Anttila, 1995; Fielding *et al.*, 1998; Klock *et al.*, 2003; Beatens *et al.*, 2000; Byrd *et al.*, 2003; Winter & Daniluk, 2004; Yee *et al.*, 2007) or financial (Sauer & Paulson, 1992; Kalfoglou & Gittelsohn, 2000; Patrick *et al.*, 2001) reasons for donating oocytes, other critically important factors underpinning the motivation to donate have largely been ignored. According to the structural model utilised in this study, a relationship between less conventional reasons for parenthood and intentions to donate was found. The items on the Reasons for Parenthood scale (Langdridge *et al.*, 2005) reflect dominant and normative reasons for wanting to have a child, so a low score on the scale indicates less conventional reasons for parenthood. Intenders scored lower than possible intenders and non-intenders, but there were no differences between the groups relating to their intention to have a child in the future. Further, intenders reported significantly more positive and stronger attitudes towards the importance of parenthood and children yet at the same time they did not believe in the importance of a genetic connection between a parent and child. A plausible explanation of these apparently contradictory findings is that intenders [and possibly oocyte donors] may have less conventional reasons for wanting to have children; they are participating in the creation of an unconventional family; they do not wish to care for the offspring; and attach little value to a genetic tie with the child. Cumulatively therefore, an important factor in a potential oocyte donor's characteristic profile is their less conventional and non-normative perceptions of parenthood, which coincides with and, not conflicts, with their strong beliefs about the importance of parenthood and children. It may be for this very reason why oocyte donation, as Kirkman (2003) and Winter & Daniluk (2004) found, is compatible with oocyte donors notion of motherhood; it is because their notion of parenthood is not restricted to the traditional ideology about the family which is still prevalent in modern society (e.g. van den Akker, 2001; Purewal & van den Akker, 2007; Lesnik-Oberstein, 2008) and not reliant on genetic relatedness. These findings support a



recent study that found women reporting a willingness to become a surrogate mother (another unconventional method of achieving motherhood) were also more likely to report lower scores on the reasons for parenthood scale (Poote and van den Akker, 2008).

## **Conclusion**

Factors influencing women's decision to donate their oocytes are complex and multifaceted. Positive attitudes towards oocyte donation, attitudes towards the consequences of oocyte donation, and perceived social support all have a direct effect on willingness to donate, confirming previous work (Skoog-Svanberg *et al.*, 2003; Purewal & van den Akker, 2006). However, this theoretical model is only useful in relation to other important factors such as demographics and perceptions of parenthood. It is possible that donors may have less conventional reasons for wanting to have children and that participating in the oocyte donation process; some unconventional parenthood desires may be fulfilled. In depth qualitative research will delineate these issues and could explain these contradictions and paradoxes more fully.

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## **Disclosure of Interest**

There were no conflicts of interest and the authors (or the author's institution) have no financial or personal relationships or affiliations that could influence (or bias) the author's decisions, work, or manuscript.

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**Table 1: Demographic Characteristic of intenders, possible intenders and non-intenders**

<b>VARIABLE</b>	<b>INTENDERS</b>	<b>POSSIBLE INTENDERS</b>	<b>NON- INTENDERS</b>
<b>Mean Age*</b>	27.9 (SD=4.7)	28.4 (SD=4.7)	26.7 (SD=4.6)
<b>In Relationship<sup>ns</sup></b>	61.4%	61.7%	66.7%
<b>Professional status<sup>ns</sup></b>	41.3%	43.4%	48.5%
<b>Child/ren<sup>***</sup></b>	49.2%	34.4%	17.8%
<b>Past miscarriage<sup>**</sup></b>	23.8%	18.9%	8.9%
<b>Past termination<sup>**</sup></b>	24.6%	15.6%	8.9%
<b>Higher education<sup>***</sup></b>	46.4%	54.1%	78.2%
<b>Fertility problem<sup>**</sup></b>	16.7%	20.5%	8.6%

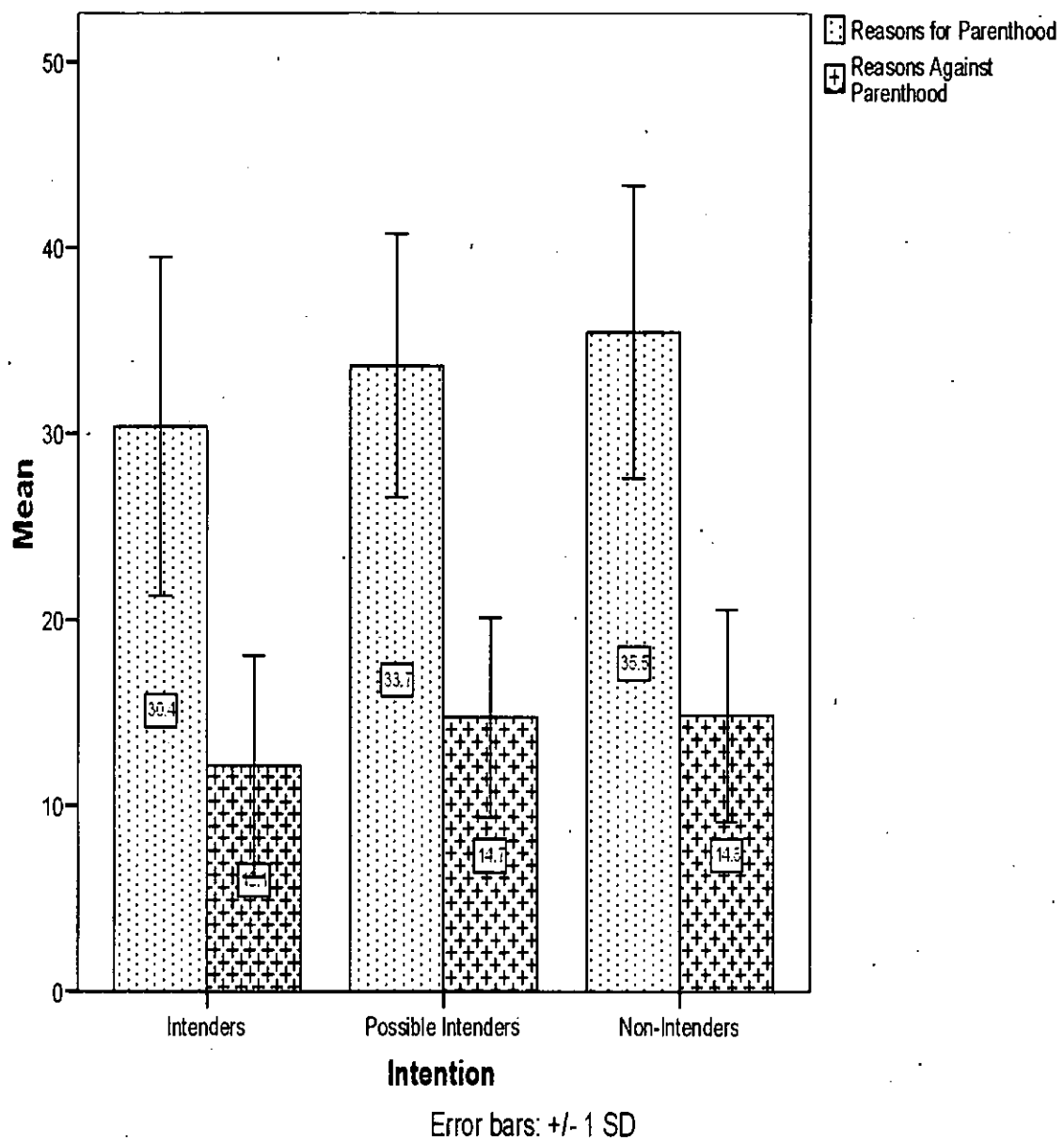
\*p <0.05; \*\* p <0.01; \*\*\*p <0.001, ns=non-significant. ANOVA was performed to compare differences in age between groups and chi-square tests were performed to compare all other socio-demographic data.



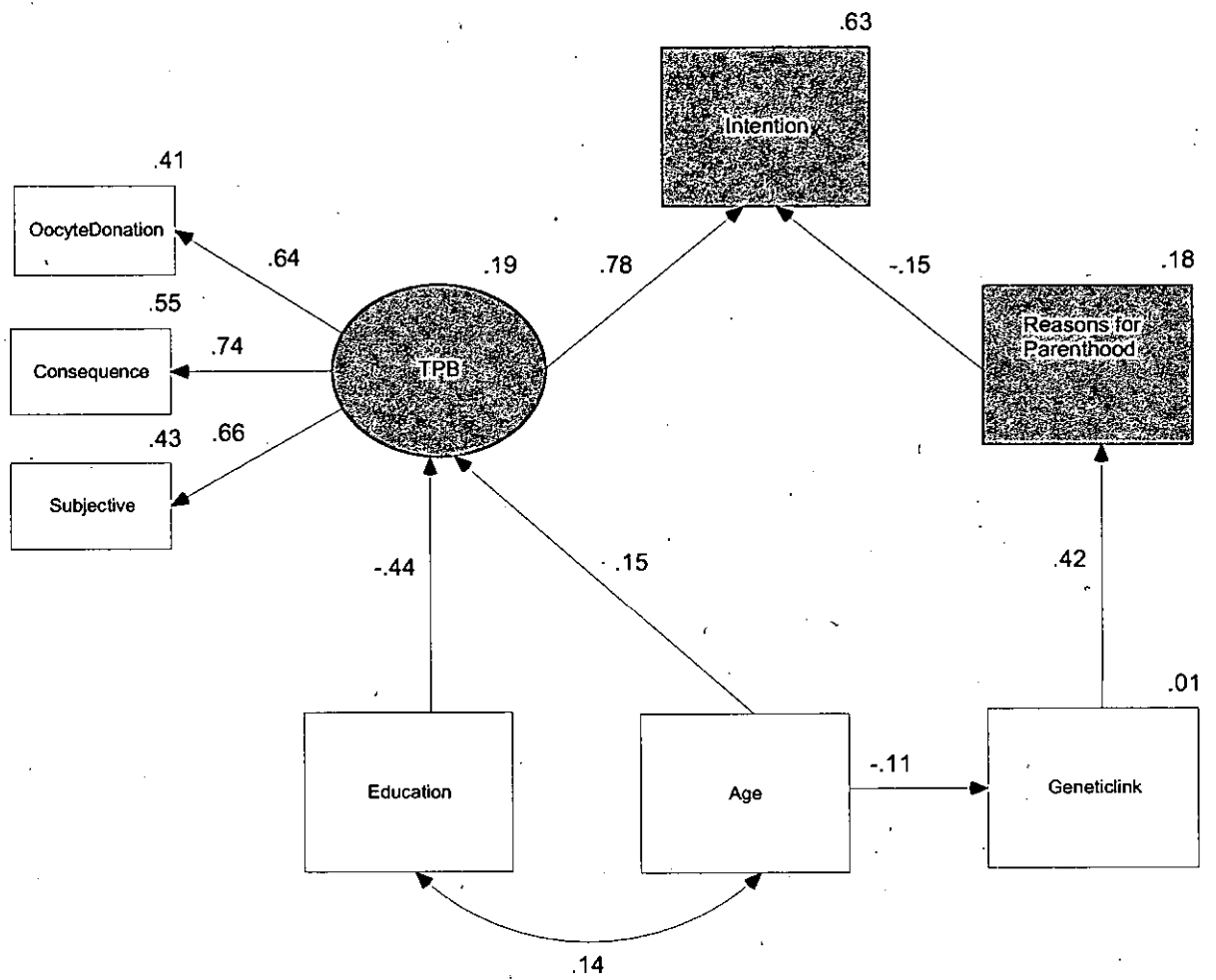
**Table 2: Means on the Attitudes towards oocyte donation sub-sections**

<b>OOCYTE DONATION SUB-SECTIONS 'ATTITUDES TOWARDS'</b>	<b>MEANS FOR INTENDERS</b>	<b>MEANS FOR POSSIBLE INTENDERS</b>	<b>MEANS FOR NON-INTENDERS</b>	<b>TOTAL SAMPLE MEAN</b>
<b>Oocyte donation<sup>a, b, c</sup></b>	23.2 (SD = 2.1)	22.3 (SD = 2.1)	18.2 (SD = 5.3)	21.4 (SD = 3.9)
<b>Consequences of oocyte donation<sup>a, b, c</sup></b>	27.2 (SD = 3.4)	24.5 (SD = 3.8)	20.1 (SD = 4.3)	24.2 (SD = 4.8)
<b>Disclosure to offspring<sup>b, c</sup></b>	21.0 (SD = 4.2)	20.6 (SD = 4.8)	22.4 (SD = 5.0)	21.3 (SD = 4.7)
<b>Factors that would induce women to donate<sup>b, c</sup></b>	40.3 (SD = 5.1)	40.5 (SD = 5.9)	35.4 (SD = 7.9)	40.1 (SD = 6.7)
<b>Recruitment<sup>a, b, c</sup></b>	16.2 (SD = 3.7)	11.6 (SD = 4.3)	6.6 (SD = 3.6)	11.8 (SD = 5.5)
<b>Importance of parenthood<sup>a, b, c</sup></b>	20.7 (SD = 4.9)	19.5 (SD = 4.2)	18.3 (SD = 4.7)	19.6 (SD = 4.7)
<b>Circumstances in the procedure of oocyte donation<sup>b, c</sup></b>	19.1 (SD = 3.7)	18.6 (SD = 3.5)	16.0 (SD = 3.9)	18.1 (SD = 3.9)
<b>Importance of genetic link<sup>b, c</sup></b>	11.7 (SD = 3.6)	12.4 (SD = 3.9)	13.8 (SD = 3.6)	12.5 (SD = 3.8)

ANOVAs used to compare means. <sup>a</sup> = intenders significantly different to possible intenders; <sup>b</sup> = intenders significantly different to non-intenders; <sup>c</sup> = possible intenders significantly different to non-intenders.



**Figure 4: Mean scores for Reasons for and against Parenthood**



**Figure 2: Structural Model for Intention towards Oocyte Donation.**

#### **Appendix 7.4 Attitudes and Intentions to Donate Oocytes for Research.**

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Attitudes and Intention to Donate Oocytes for Research

Dear Professor van den Akker,

I am pleased to inform you that the above-mentioned manuscript has been accepted for publication in *Fertility and Sterility*.

Accordingly, your manuscript will now be transmitted to production for copy editing. You should receive your galley proof in about 4 weeks. Please review the galley and answer the copy editor's queries.

Thank you again for submitting your manuscript to *Fertility and Sterility*.

Sincerely,

Alan H. DeCherney, M.D.  
Editor-in-Chief

Reviewers' comments:

Reviewer #2: The authors took into consideration all suggested revisions. The manuscript is acceptable for publication in its current form and it is certainly of interest to the *Fertility and Sterility* readers.

**Title Page**

**Attitudes and Intention to Donate Oocytes for Research**

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**Conflict of interest:** There are no known conflicts of interest, financial or other kind.

### **Capsule**

This study used structural equation modelling and found components of the Theory of Planned Behaviour and demographic characteristics directly influenced the intention to donate oocytes for research.

## **Abstract**

**OBJECTIVES:** In 2007, the Human Fertilisation and Embryology Authority (HFEA) permitted oocyte donation for research through voluntary donation or within an oocyte share model. The aims of this study were to investigate volunteer (non-patient) women's attitudes and intention to donate using components of the Theory of Planned Behaviour (TPB) and their attitudes towards parenthood through structural equation modelling (SEM). **DESIGN:** Questionnaires. **SETTING:** Online. **POPULATIONS:** A total of 253 non-patient women. **MAIN OUTCOME MEASURES:** Attitudes towards oocyte donation for research and reasons for parenthood scale. **RESULTS:** Of the 253 respondents, 94 were potential donors, 98 were possible donors and 61 were non-donors. The majority of potential donors (68%) reported no preference towards donating their oocytes towards research or an infertile couple. SEM revealed that age ( $\beta = -.03$ ) and components of the TPB ( $\beta = .16$ ) had a statistically significant direct effect on intention to donate for research. Attitude towards parenthood was not linked to intention to donate for research. **CONCLUSION:** There appears to be a strong altruistic motive along with the theoretical underpinning of positive attitudes, feeling supported and accepting the consequences of oocyte donation for research, suggesting these have the potential to inform recruitment practices and tailor clinical services.

**Key Words:** Oocyte Donation; Theory of Planned Behaviour; Attitudes; Infertility; Stem cell Research

## **Introduction**

In 2007, the Human Fertilisation and Embryology Authority (HFEA) issued new legislation that allowed women to donate their oocytes for research. Until recently, most embryo research projects that have been licensed by the HFEA, obtain their oocytes from either those leftover after patients have undergone in vitro fertilisation (IVF); are not suitable for treatment (e.g. oocytes that failed to fertilise); or from couples who no longer require their oocytes. However, medical researchers argue that they need good quality oocytes for therapeutic and research purposes, so they successfully proposed using the same method that fertility clinics use to obtain oocytes for fertility treatment; specifically to recruit non-patient donors; or patient donors through oocyte sharing programmes whereby they donate for research in order to obtain subsidised infertility treatment [1]. Procedurally, there is little difference between oocyte donation for research or fertility treatment [2]. However, the objectives and the personal, social and moral ramification of these two donation domains are clearly disparate.

### *Embryo Donation for Research*

It is unclear how women will behave towards the option of oocyte donation for research and what factors would underpin their decision to donate. The majority of studies in the research literature have targeted clinical groups and focused on embryo donation for research and not specifically oocyte donation but there are distinctive differences between people's perceptions of embryos and oocytes [3, 4]. For example, embryo donation studies have reported mixed findings on the number of patients willing to donate their embryos for research, ranging from 10% [5] to 30% [6] and 54% [7]. Bjuresten & Hovatta [8] reported the highest number of patients (92%) agreeing to donate their embryos for research, however these were embryos that could not be used in their infertility treatment and would have otherwise been discarded, which may explain the high figures. Studies have also



reported that patients were significantly more likely to agree to donate their embryos to research than to fertility treatment for other couples [5, 6, 9, 10]. Further, McMahon *et al.* [5] measured patient's attitudes and concerns towards donation of their embryos for medical research. They found that 80% of respondents viewed their embryo as potential children, which was higher than the 30% reported by Laruelle & Englert [11].

#### *Oocyte Donation for Fertility Treatment, Theory of Planned Behaviour and Parenthood*

Although there are likely to be differences between attitudes towards donating oocytes for research and fertility treatment, it is possible there are commonalities. For instance, past research has shown that components of the Theory of Planned Behaviour (TPB) (a psychological health model) [12, 13] were successful at differentiating [14] and predicting [15] women who were willing versus those who were unwilling to donate towards fertility treatment. According to the TPB model, attitudes; subjective norms and perceived behavioural control predict intentions to perform a behaviour. So, past studies [14, 15] have found that women with positive attitudes towards oocyte donation and positive assessments of the consequences of donation (attitudes); social support in donating oocytes (subjective norms); and high levels of behavioural control in ability to donate (perceived behavioural control) reported intentions to donate their oocytes. Other studies have found altruism [16-24]; financial incentives [25-27] or making up for a loss, such as a past abortion or rape [26, 28] influenced the decision to donate. Research has also demonstrated that the perceived importance of parenthood is a key factor in determining intention to donate for treatment [22, 23, 24, 26, 29, 30, 31]. This argument is further strengthened by de Lacey's [32] findings that the role of parenthood is pivotal in embryo donation for treatment and for some patients, embryo donation was likened to child relinquishment.

#### *Patient Donors or Non Patients Donors*

The European Society for Human Reproduction (ESHRE) Task Force on Ethics and Law [33] asserts that oocyte donors for research are no different from other research participants in clinical trials, although they hold them in a 'special category' [34] or as 'research donors' [2]. There has also been opposition towards the HFEA's ruling to allow oocyte donation for research (e.g. Hands Off Our Ovaries campaign [35]). Particular concern has been voiced against the possible exploitation and coercion of vulnerable women entering an egg sharing contract and the inappropriate use of financial incentives (a concern also voiced in donating for treatment). One possible method of averting conflicts of interest and exploitation is to recruit more non-patient donors [36, 22]. Women, who donate as non-patients for altruistic reasons without financial encouragement, would be more comparable to typical research participants in comparison to egg sharing donors. However, to date little is known about the factors that would influence non-patient women's decision to donate their oocyte for research. Since, the majority of studies have targeted clinical groups and focused on embryo donation for research and not specifically oocyte donation, this study is timely. The aims were therefore to investigate women's attitudes towards oocyte donation for research and their intention to donate in a general population sample. Components of the Theory of Planned Behaviour and the link between parenthood and intention to donate were examined using structural equation modelling (SEM). SEM is a statistical technique used for theory testing [37] and appropriate for the evaluation of the application of components of the TPB to oocyte donation.

## **Materials and Method**

### *Design and Measures*

A questionnaire design was used. The translated version of the Attitudes towards Oocyte donation scale [14, 15] was modified and adapted to assess women attitudes and intention to donate oocytes for research. The Reasons for Parenthood Scale [38] was also

administered to assess the link between intention to donate oocytes and women's attitudes towards parenthood.

The Attitudes towards oocyte donation questionnaire included 11 subscales (Attitudes towards disclosure to offspring subscale from the original questionnaire was removed because of lack of appropriateness and replaced by Donation preference subscale). Each of subscale is described in detail below and the five italicised subsections were used to test the theoretical tenets of the TPB. The respondents rated each item on a five point Likert-type scale that ranged from strongly agree (5) to strongly disagree (1) and included a 'cannot form an opinion' (0) option. Scores from individual items were later summed to create a total score for different subsections. A high score represented positive attitudes and low score represented negative attitudes.

*Attitudes towards oocyte donation* ( $\alpha .75$ ) was an 'attitudes' component of the TPB that measured positive or negative judgements about oocyte donation. This subscale included nine items with a potential score range of 0 to 45. Some items on this subscale were modified from the original questionnaire to pertain to oocyte donation for research. For example, 'Egg donation is a good way to help childless couples' was changed to 'Egg donation for research is a good way to help contribute to science'.

*Attitudes towards the consequences of oocyte donation* ( $\alpha .52$ ) measured beliefs about the personal and social consequences of donating oocytes and was another 'attitudes' tenet of the TPB. The subscale consisted of seven items and a score range of 0 to 35. Items were again modified from the original questionnaire. For example, 'Would you be happy about helping a couple that is unable to have children by other means?' was changed to 'Would you be happy that your donation may one day help to find a cure for diseases and illnesses?'

*Subjective norms* (TPB component from original questionnaire) was measured using one item that assessed perceived social support in deciding to donate oocytes. Respondents were asked to rate from 0 to 5 on whether 'The important people in my life would support my decision to donate eggs'.

*Perceived behavioural control* (a TPB component from the original questionnaire) also included one item that measured the extent to which a woman feels she can donate her oocytes. Respondents were asked whether 'It is entirely up to me whether or not I want to donate an egg' on a scoring system that ranged from 0 to 5.

*Intention to donate* (the final TPB component also from the original questionnaire) was measured using 'Could you see yourself donating eggs at some point in the future?' item and consisted of three ordered categorical responses of 'yes', 'maybe/don't know' or 'no'. The Intention to donate item was used as the grouping variable to analyse the results, and respondents were classified as 'potential donors' (yes group), 'possible donors' (maybe/don't know group), and 'non-donors' (no group).

Attitudes towards parenthood ( $\alpha$  .70) subscale consisted of six unchanged items from the original questionnaire that measured the perceived importance of children. The score range was from 0 to 30 and an example of the items were 'Having children is the most important thing in life'.

Attitudes towards the importance of a genetic link between parent and child ( $\alpha$  .76) measured the perceived importance of genetic ties. Again this subscale was untouched from the original and included four items with a score range of 0 to 20. Items included 'The genetic link between mother and child is important'.

The Attitudes towards a recruitment advertisement ( $\alpha$  .89) was an unchanged subscale from the original questionnaire which assessed respondent's hypothetical response to an oocyte donation advertisement. The subscale included four items and had a

potential score range of 0 to 20. An example of an item was 'Would you surf the clinic's web site to get information?'.

Attitudes towards specific circumstances in the procedure of oocyte donation ( $\alpha$  .55) assessed respondent's attitudes towards specific issues relating to oocyte donation policy and clinic recruitment practices. The subscale included eight items and had a score range of 0 to 40. Items from the original subscale were altered to pertain to oocyte donation for research. For example, 'Only women under forty-three years of age should be able to receive donated eggs' was changed to 'Only highly successful stem cell research teams should be able to use donated eggs'.

Attitudes towards various factors that would induce women to donate ( $\alpha$  .76) assessed whether specific factors which would make the oocyte donation procedure easier for women (such as convenient clinic locality) could induce women to donate. The subscale consisted of 12 items and scores ranged from 0 to 60. Items were changed from the original questionnaire and items such as 'You had more information about what it is like to be involuntarily childless?' was changed to 'You had more information about what it is like to suffer from a disease or illness?'.

Donation preference subscale ( $\alpha$  .75) was not included in the original scale and measured whether women reported preferences relating to the donation type. The subscale consisted of three items and a score range of 0 to 15. An example of the items is 'I would donate my eggs for stem cell research which aims to find a cure for diseases and illness'.

An additional single categorical item also asked respondents 'Would you rather donate to? An infertile couple; Research; Both; or Neither'.

The Reasons for Parenthood scale measured dominant and normative reasons for wanting to have children (Langdrige, 2008, personal correspondence). So, a high score revealed normative and conventional reasons for wanting to have children whereas a low score

revealed less conventional reasons. The original scale included six reasons for parenthood (fulfilment, to please partner, make family, part of both of us, good home, and biological drive) and five reasons against (other things, restrict freedom, partner's wishes, interfere with career, and over population). However after reviewing the literature, four additional items were included in the reasons for parenthood (to carry on family name, religious beliefs, genetically part of me and confirm femininity) and one item was included in reasons against parenthood (unwanted changes). Cronbach's Alphas for the reasons *for* parenthood subscale was .89 and reasons *against* parenthood was .89. The respondents rated each item on a five point Likert-type scale that ranged from relevant (5) to irrelevant (1) on their relative importance in the respondents reproductive decision making process and scores were later summed to create a total score for reasons for and reasons against subscale. The potential score range for reasons *for* parenthood was from 10 to 50 and reason *against* parenthood was 6 to 30.

### *Participants*

A total of 253 women completed the questionnaires online; 135 were recruited from websites; 74 from a local university; 37 had completed the questionnaires after finding them through search engines and 7 were recruited from unknown sources. The mean age of the participants was 29.9 years (SD=8.8, range 16-57), the majority were White (94.1%) and 154 (67%) reported being in a long term relationship. Of the 253 respondents, nine had donated their oocytes to treatment and one had donated towards research. A total of 103 (40.7%) had at least one child, 55 (21.7%) of the respondents had miscarried and 35 (13.8%) women had terminated a pregnancy in the past. Moreover, 24 (9.5%) respondents reported they had a fertility problem and 12 (4.7%) reported their partner had a fertility problem.

### *Procedure*

The Questionnaires were developed online and specific websites were targeted that women with an interest in reproductive health would visit. Each website was contacted and following discussions, those who had a large proportion of female visitors were enlisted. The questionnaires were posted on two different websites (available upon request from the authors). University staff and students were recruited through an email request inviting them to take part in this study and a link to the online questionnaires was also attached to the email signatures of the authors of this paper. A number of respondents had also completed the questionnaires after finding it through Internet search engines. Ethical approval was granted by the local university ethics committee and informed consent was implied by the completion and submission of the questionnaires.

### *Data Analyses*

Chi-square tests were performed to compare socio-demographic data between the three main groups of women; Potential Donors, Possible Donors Non Donors. Analysis of Variance with Student-Newman-Keuls (SNK) contrasts were used to compare groups on the different sub sections on the Attitudes towards oocyte donation for research scale and the Reasons for Parenthood scale. Logistic regression analyses were performed to evaluate factors identified by the Attitudes towards oocyte donation for research, Reasons for Parenthood scale and socio-demographic data that may predict women's intention to donate. A p-value of  $<0.05$  was considered statistically significant. Additionally, in order to examine the interactions between significant TPB and Reasons for Parenthood variables and the impact of socio-demographic variables on intention to donate, Structural Equation Modelling (SEM) analyses were used (for a review see Byrne [37]). SEM analyses were performed on AMOS 7.0. A number of different models were tested and the final model was selected using overall model fit indices, such as the chi-square value, the goodness of

fit index (GFI), comparative fit index (CFI), Normed Fit Index (NFI), root mean square residual (RMSEA), the modification indices, and the distribution of residuals. An adequate model is indicative when the GFI value is close to 1.00, CFI and NFI are  $>0.95$ , and RMSEA value is less than .05 [37].

## Results

### *Intention to Donate*

Out of the 253 respondents, 94 reported they would be willing to donate in the future ('potential donors'), 98 reported maybe or don't know ('possible donors') and 61 reported they would be unwilling ('non-donors').

### *Participant Characteristics and Socio-demographic Variables Predicting Intention to Donate*

Potential donors were significantly younger compared to possible donors or non-donors ( $F(2, 252) = 19.23, P < 0.0001$ ). There were no significant differences between potential donors, possible donors or non-donors on marital status ( $\chi^2 = 5.27, d.f. = 2, P > 0.05$ ), parity ( $\chi^2 = 0.42, d.f. = 2, P > 0.05$ ), number of miscarriages ( $\chi^2 = 4.69, d.f. = 2, P > 0.05$ ) and number of terminations ( $\chi^2 = 0.67, d.f. = 2, P > 0.05$ ). However, potential donors were significantly less likely to report a higher education ( $\chi^2 = 10.11, d.f. = 2, P < 0.006$ ) and were significantly more likely to report lower socio-economic status ( $\chi^2 = 17.14, d.f. = 2, P < 0.0001$ ) compared to the other donor groups. There were no differences between donor groups regarding respondent's fertility status ( $\chi^2 = 4.91, d.f. = 2, P > 0.05$ ) and their partner's fertility status ( $\chi^2 = 2.21, d.f. = 2, P > 0.05$ ). See Table 1 for demographic characteristic of potential donors, possible donors and non-donors.

### *Donation Preference and Perceptions of Oocytes*



The majority of potential donors (68%) reported no preference towards donating their oocytes towards research or an infertile couple. Possible donors reported no preference (42%), or would rather donate to an infertile couple (37%). Whereas, non-donors (if they had to choose) were more inclined towards donating their oocytes towards an infertile couple (41%), with 31% still rating 'neither' as their preferred choice. Potential donors were probed on the type of research they would consider donating their oocytes towards and 70% reported they would donate to find a cure for illnesses and diseases, 72% would agree to donate to research trying to improve fertility treatment and 68% reported that they would donate to make a difference. In addition, the majority of participants across groups (45%) did not perceive an oocyte to be a potential life form, 28% were neutral, whereas, 27% did. Analyses between groups showed no significant differences between potential donors and non-donors ( $Z = -1.39$ ;  $P > 0.05$ ) and possible donors ( $Z = -.27$ ;  $P > 0.05$ ) in their perception of oocytes.

#### *Attitudes towards Oocyte Donation for Research and Reasons for Parenthood*

Table 2 shows the group means and standard deviations on the questionnaire subscales. Potential donors followed by possible donors had significantly more positive attitudes towards many aspects relating to oocyte donation than non-donors. For example, post hoc analyses using Student Newman Keuls (SNK) revealed potential donors and possible donors scored significantly higher on 'Attitudes towards oocyte donation for research' ( $F(2,252) = 5.17$ ,  $P < 0.006$ ), Potential donors and possible donors also scored significantly higher on 'Attitudes towards the consequence of oocyte donation' ( $F(2,252) = 18.29$ ,  $P < 0.0001$ ) compared to non donors. Potential donors also scored significantly higher on 'Attitudes towards recruitment of oocyte donors' compared to possible donors, who in turn scored higher than non-donors ( $F(2,252) = 32.48$ ,  $P < 0.0001$ ). Lastly, potential donors and possible donors reported significantly more positive 'Attitudes towards various factors that

would induce women to donate' ( $F(2,252)= 5.89, P<0.003$ ) compared to non-donors. However, there were no significant differences between donor groups on 'Attitudes towards parenthood' ( $F(2,252)= 2.20, P>0.05$ ), 'Attitudes towards importance of a genetic link' ( $F(2,252)= 2.20, P>0.05$ ) and 'Attitudes towards specific circumstances in the procedure of oocyte donation' ( $F(2,252)= 0.36, P>0.05$ ) subscales. There were no significant differences between the donor groups relating to their reasons *for* ( $F(2, 252) = 2.07; P>0.05$ ) and *against* parenthood ( $F(2, 252) = 2.31; p>0.05$ ).

### *Factors Predicting Intention to Donate*

A logistic regression model was used to assess the ability of socio demographic variables and the Theory of Planned Behaviour (TPB) to predict intention to donate. Regression analyses revealed that age ( $OR = .90, P<0.0001$ ), 'Attitude towards the consequences of oocyte donation' ( $OR = 1.21, P<0.01$ ) and 'Subjective norms' ( $OR = 1.58, P<0.05$ ) (both components of the TPB) successfully predicted intention to donate. 'Attitude towards oocyte donation' ( $OR = .105, P>0.05$ ) and 'Perceived behavioural control' ( $OR = 1.06, P>0.05$ ) did not predict intention.

### *Structural Equation Modelling Summary*

Fig 1 presents the structural equation model, including specified interactions. Unlike the logistic model which found only two components of the TPB (and age) predicted intentions to donate, the SEM model found, younger age ( $\beta = -.03, P<0.001$ ) and three components of the TPB; namely high levels of 'Subjective norms', positive 'Attitudes towards oocyte donation', and positive 'Attitudes towards the consequences of oocyte donation' ( $\beta = .16, P<0.001$ ) were predictive of intention to donate. Age also had a direct influence on TPB components. The model accounts for 38% of the variance in the intention to donate. The overall fit of the model was good, with  $\chi^2 = 6.43$  (d.f. = 4,  $P =$

.170) and fit indices of 0.99 for GFI, 0.98 for CFI, 0.96 for NFI, and 0.05 for RMSEA. Models where socio-demographic variables, various attitudes towards oocyte donation and behavioural control component in TPB were represented did not yield good fits.

## **Discussion**

### *Overview of Findings*

This study has found that nearly one third of women questioned would consider donating their oocytes for research. Burton & Sander [6] reported similar figures of their clinical sample, whereas, these figures differ considerably from Choudhary *et al.*'s [7] and Bjuresten's & Hovatta's [8] studies who reported over half of their patient sample agreed to donate their embryos to research. Our potential donors were in the young age group category and may have had a simplistic view of this process. The majority of donors in our study reported no preference towards donating their oocytes towards research or fertility treatment, highlighting differences between patient groups and volunteers. For example, previous studies that have examined patient groups have noted a significant preference towards donating their oocytes to research as opposed to another infertile couple [6, 9, 10]. Elford *et al.* [39] and Fuscaldo *et al.* [40] have noted that patients find the possibility of their genetic child being raised elsewhere distressing. It seems plausible that patient groups are more reluctant to donate their oocytes to another couple because they themselves are undergoing fertility treatment, and the thought of another couple achieving a successful pregnancy using their oocytes could be uncomfortable. In contrast, volunteers' ability (as studied here) to conceive is not being challenged and the possibility that a couple could parent their genetic child would most likely not have the same meaning or personal ramifications as it would for a patient couple.

There appears to be a strong altruistic motive underpinning the decision to donate. The majority of our potential donors reported they would donate to find a cure for illnesses, improve fertility treatment and do something that makes a difference. Research on embryo donation for research has also noted altruistic motives for donation [40], as did some studies on oocyte donation for fertility treatment [16-24] but not all [15]. Other studies of oocyte donation for treatment suggest that oocyte donation allows some women the opportunity to pass on their genes [14, 26]. Since these two types of oocyte donation differ considerably [34], it is possible that oocyte donation for research represents truer altruistic motives for donation compared to oocyte donation for treatment. However, participants in this study were not asked to reveal other reasons for donating, such as, making up for a previous loss.

The majority of respondents (across groups) in this study did not perceive an oocyte as a potential life form, whereas patient groups are more likely to perceive embryos as potential children [41] which is a contributing factor in their general unwillingness to donate their embryos for research [5, 11, 32, 40, 42]. In clinical practice, patients are forced to think explicitly about embryos and gametes, have discussions about them with their physicians, undergo tests to assess the quality of their gametes and embryos and want their embryo to successfully develop into a foetus, all of which may be responsible for shaping patient's perceptions. Whereas, non-patients who are not confronted with the necessity to consider their oocytes or embryos so explicitly, are not fashioned into thinking of their oocytes as potential children.

#### *Attitudes towards Parenthood*

There were no significant differences between donor groups in their attitudes towards parenthood. These findings contrast with studies that have examined attitudes towards

oocyte donation for fertility treatment. Some studies have found that an important factor underpinning women's reasons for donating to fertility treatment was their appreciation of the desire for motherhood [22, 23, 24, 26, 29, 30, 31] and other studies on women from the general population [14, 15] have found that women who were more likely to donate their oocytes for treatment were more likely to consider parenthood as important. In contrast to oocyte donation for fertility treatment, donation for research does not result in a child and may be partly responsible for these differences. However, oocyte donation for research is dependent on other factors and amongst the most important were components of the TPB.

### *Theory of Planned Behaviour*

These findings confirmed previous work [14, 15] which demonstrated the successful application of components of the TPB to oocyte donation for fertility treatment. van den Akker [43] noted that the literature on oocyte donation for fertility treatment is devoid of theoretical underpinnings and the same criticism can be applied to oocyte donation for research. The TPB appears to be a significant model in oocyte donation and provides a basis for investigating and explaining the attitudinal processes that underpin women's decisions to donate their oocytes. This information can be used in recruitment strategies for increasing awareness of oocyte donation and attracting potential donors.

This study examined altruistic (non-patient) women's attitudes towards oocyte donation for research and the results from this study cannot be generalised to oocyte share patients. Future research could explore whether patient donors share similar attitudes towards oocyte donation for research to non-patient populations. Additionally, although women were recruited from different sources (websites and university samples), separate additional analyses (available from the authors) revealed that there were no significant differences on both questionnaires with an exception to two subscales (women recruited

from websites scored higher on 'Attitudes towards recruitment' and 'Attitudes towards factors that would induce women to donate'). Since neither of these featured in the model or regression analyses, this was not considered problematic.

### *Conclusion*

In this study, one third of women from the general population would consider donating their oocytes for research and there appears to be a strong altruistic motive influencing their decision to donate. The TPB was successfully applied to oocyte donation for research and has the potential to inform recruitment practices and tailor clinical services. Future research extrapolating differences between oocyte donation for research and for fertility treatment is warranted.

### **Acknowledgement**

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## Legends

### Table 1:

**Table 1: Demographic Characteristic of potential donors, non-donors and possible donors**

\*p <0.05; \*\* p <0.001; \*\*\*p <0.0001. ANOVA was performed to compare differences in age between groups and chi-square tests were performed to compare all other socio-demographic data between groups.

### Table 2

**Table 2: Means and SD's on the Attitude towards oocyte donation for research and Reasons for Parenthood sub-sections**

\* p<0.05; \*\* p <0.01; \*\*\* p <0.0001. ANOVAs used to compare means between groups.

### Figure 1

**Figure 1: Structural model of oocyte donation for research**

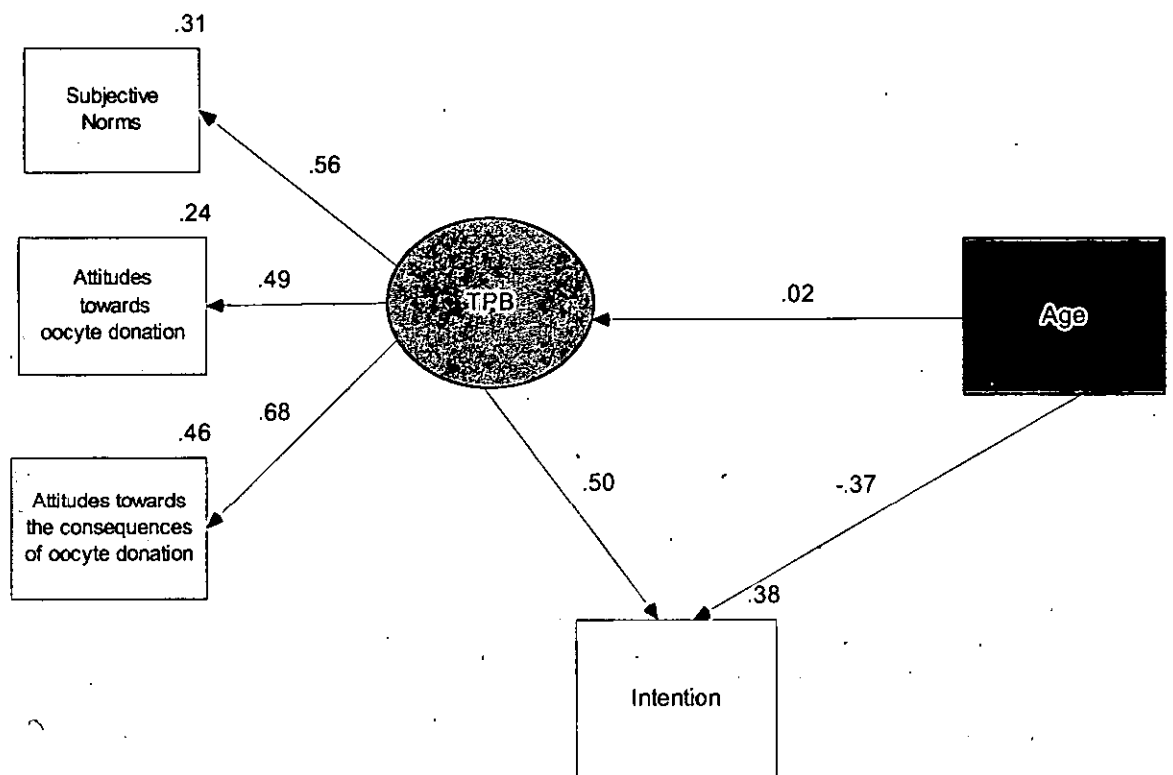
Note: Circles represent latent variables and squares represent observed variables. Value are standardised coefficients; all coefficients are significant at p<0.05. TPB represents Theory of Planned Behaviour components; SEM analyses performed on AMOS 7.

**Table 1: Demographic Characteristic of potential donors, non-donors and possible donors**

Variable	Potential Donor	Non-Donor	Possible Donor	P Value
Mean Age	26.7 (SD = 6.7)	35.1 (SD = 11.1)	29.7 (SD = 7.5)	***
Marital Status (% with partner)	58%	75%	68%	NS
Parity (% with at least one child)	38%	41%	43%	NS
Miscarriages (% with at least one past miscarriage)	16%	20%	29%	NS
Terminations (% with at least one past termination)	16%	12%	13%	NS
Socio-Economic Status (% with professional status)	29%	62%	44%	***
Qualification (% with higher education)	46%	71%	49%	*
Fertility Status (% with fertility problem)	4%	12%	13%	NS
Partner's Fertility Status (% with partner's fertility problem)	3%	8%	4%	NS

**Table 2: Means and SD's on the Attitudes towards oocyte donation for research and Reasons for Parenthood subsections**

Oocyte Donation Sub-Sections	Means for Potential Donors	Means for Possible Donors	Means for Non-Donors	P Value
Attitudes towards oocyte donation in general	33.7 (SD=4.9)	32.8 (SD=5.9)	30.8 (SD=6.1)	**
Attitudes towards the perceived consequences of oocyte donation	25 (SD=3.2)	24.3 (SD=3.3)	21.7 (SD=3.9)	***
Attitude towards recruitment	16.1 (SD=3.8)	13.2 (SD=4.6)	10.3 (SD=4.9)	***
Attitudes towards specific circumstances in the procedure of oocyte donation	27.9 (SD=5.3)	28.4 (SD=4.3)	28.4 (SD=4)	NS
Attitudes towards factors that would induce women to donate	43 (SD=5.9)	43.6 (SD=5.2)	40 (SD=9)	**
Attitudes towards the importance of children	18.9 (SD=4.8)	20.1 (SD=4.5)	18.7 (SD=4.6)	NS
Attitudes towards the importance of genetic link	12 (SD=3.6)	13 (SD=3.6)	12.2 (SD=3.7)	NS
Reasons for Parenthood	30 (SD=10.3)	32.9 (SD=10.2)	31.9 (SD=9.7)	NS
Reasons against Parenthood	13 (SD=6.8)	11.3 (SD=5.9)	13.2 (SD=6.4)	NS



**Figure 1: Structural model of oocyte donation for research**

## Appendix 7.5 Oocyte Donation, Parenthood and the Theory of Planned Behaviour:

### Structural Equation Modelling Analyses

Purewal, S & van den Akker, O. B. A. (2008). Oocyte Donation, Parenthood and the Theory of Planned Behaviour: Structural Equation Modelling Analyses. Journal of Reproductive and Infant Psychology. 26, (3), p. 263-264. (Abst).

Downloaded By: [Noten University]

surrogacy. No differences in perceptions of the importance of a genetic link were obtained, although positive and typical perceptions of parenthood were also characteristic of women possibly willing to consider becoming surrogates, compared to those unwilling.

#### Attitudes towards oocyte donation and parenthood: Structural equation modelling analyses

Satvinder Purewal and Olga van den Akker

*Department of Psychology, School of Health and Social Sciences, Middlesex University, London, UK*

This study assessed components of the Theory of Planned Behaviour (TPB) in oocyte donation and examined the link between women's intention to donate and their reasons for parenthood using Structural Equation Modelling (SEM). A total of 528 women completed the questionnaire; 156 were intended donors, 168 were possible donors and 204 were non-donors. Intended donors were younger, more likely to have had a past termination, reported lower socio-economic status and less education compared to possible donors or non-donors. Intended donors demonstrated ambiguity towards issues of disclosure of genetic origin to the offspring; they reported more negative attitudes towards disclosure compared to non-donors, they were also more likely to report they would be glad that perhaps their offspring might try to find them after 18 years and be happy that their genes were being passed on. In addition, intended donors were significantly more likely to report less typical reasons for wanting to have children compared to the other donor groups. SEM analyses revealed younger age ( $\beta = -.015$ ,  $P < 0.001$ ), being less educated ( $\beta = -.084$ ,

$P < 0.001$ ), and the theoretical components, namely: receiving social support, positive attitudes towards oocyte donation, positive attitudes towards the consequence of oocyte donation ( $\beta = .124$ ,  $P < 0.001$ ) and endorsing less typical reasons for parenthood ( $\beta = -.016$ ,  $P < 0.001$ ) were predictive of intention to donate. Components of the TPB all have a direct effect on intention to donate. However, SEM found that TPB components are only useful in relation to other important factors such as demographic variables and perceptions of parenthood.

**Looking on the bright side of life: The role of optimism in predicting long-term adjustment to miscarriage**

Ingrid Rowlands and Christina Lee

*School of Psychology, University of Queensland, Brisbane, Australia*

**Introduction:** Psychosocial and reproductive factors have been identified as predictors of poor adjustment following miscarriage. However, the evidence is conflicting, and relatively little is known about those factors which may facilitate resilience.

**Method:** Three waves of data from the Younger cohort of the Australian Longitudinal Study on Women's Health (ALSWH) were used to examine factors predicting positive mental health among 1167 women who had experienced miscarriage. Using the Sitem Mental Health subscale (MHL5) of the SF-36 we



## Appendix 7.6 Factors Influencing Attitudes towards Potential Oocyte Donation for Research.

Purewal, S & van den Akker, O. B. A. (2008) Factors Influencing Attitudes towards Potential Oocyte Donation for Research. *Book of Abstracts, BPS Annual Conference 2008*, p. 178-179. (*Abst*).

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### G24

**Experiences of the Body and Medical Treatment: A Phenomenological Study**  
Grainne Ni Mhaille, Jean Quigley, School of Psychology, Trinity College Dublin

**Objectives:** Technological development and expansion has had a massive input into health care. Medical technology now informs both patient and professional accounts of illness, disease and health; issues of accountability; allocation of material and human resources; aspects of professional and inter-professional practice, the patient-physician relationship, and much more. Technological growth in the field of medicine has furthered our scientific understanding of the physiological body and our ability to treat physiological dysfunction. But what happens when bodily experiences are disrupted by medical technological interventions? What effect does this have on the individual? The aim of this study was to explore the experience of medical technology and the experience of the body during and after medical treatment to analyse how medical technology affects one's sense of identity and integrity.

**Design:** 17 semi-structured interviews were carried out with individuals (four men, 13 women) who had been diagnosed with varying illnesses and had undergone different types of medical treatments. The technologies of haemodialysis (five), radiation therapy (eight) and surgery (four) were chosen for this investigation due to their contrasting nature. The fundamental function of haemodialysis is to extract the patient's blood from his/her body and purify that blood, while in RT the patient is treated with invasive beams that obliterate cancerous cells. In surgery the patient is treated with either the removal of a part of the body or the enhancement or addition of a body part.

**Analysis:** The interviews were analysed using a phenomenological framework whereby embodied experience is seen as the ground for culture and self (Merleau-Ponty, 1945).

**Results:** The analysis of the experience of treatment yielded a dichotomous theme 'Representations of Treatment'. Participants who had undergone haemodialysis tend to describe their treatment as unremarkable and restorative. However, participants who had undergone RT described their treatment as unusual and destructive. The experience of participants who had

undergone surgery was more varied but most spoke of the treatment as destructive and dangerous. The impact of treatment technology and concomitant physical disruption on sense of self and social identity was also detailed. Two overarching, interrelated themes emerged: (1) 'Body perception/Self-perception', and (2) 'Being in the World'. Body perception/Self-perception focused on changes in perceived self as a result of physical alterations to the body. Being-in-the-World reveals participants' changed experiences of their social and material environment after the experience of illness.

**Conclusion:** Bodily changes are not experienced objectively; rather they have symbolic repercussions for the individual. Alterations in embodied experiences result in changed experiences of self, others and the world. Therefore, the body is an important actor in the experience of illness and medical technology.

### G25

**Factors Influencing Attitudes towards Potential Oocyte Donation for Research**  
Satvinder Purewal, Olga van den Akker, Middlesex University

**Objectives:** In 2007, the HFEA issued new legislation that allowed women to donate their oocytes for research purposes as altruistic donors or as patient donors through oocytes sharing programmes for subsidised infertility treatment. This study examined factors underlying women's decisions to donate their oocytes for research.

**Design:** An online questionnaire design was used to measure women's attitudes and willingness to donate oocytes for research using the Theory of Planned Behaviour (TPB). Specific websites were targeted that women with an interest in oocyte donation would visit.

**Methods:** A total of 210 women completed the online questionnaire, the majority of respondents were White (94 per cent) and aged 16 to 57 (mean age 29 years).

**Results:** Of the 210 respondents, 80 (38.1 per cent) were potential donors, 45 (21.4 per cent) were non-donors and 85 (40.5 per cent) were possible donors. Potential donors (Mean age 27) were significantly younger ( $F(2,209)=9.15$ ;  $p<0.001$ ) compared to non-donors (Mean age=33) and possible donors (Mean age=30). The majority of potential donors (66.3 per cent) reported no preference towards donating their oocytes towards research or an infertile couple. However, non-donors reported more inclination (44.4 per cent) towards donating their oocytes towards an infertile couple compared to research, both or neither. Potential donors had significantly more positive attitudes towards oocyte donation for research ( $F(2,209)=8.72$ ;  $p<0.001$ ), had more positive attitudes towards the consequences of oocyte donation for research purposes ( $F(2,209)=15.32$ ;  $p<0.001$ ), reported greater control beliefs in making the decision to donate their oocytes ( $Z=2.58$ ;  $p<0.01$  and  $Z=2.23$ ;  $p<0.026$ ) and believed they had more support from important others in their lives in

making the decision to donate ( $Z=3.78$ ;  $p<0.001$  and  $Z=2.73$ ;  $p<0.006$ ) compared to non-donors and possible donors respectively, thus confirming all hypotheses derived from the TPB. Donors were also significantly more likely to report they would donate their oocytes to stem cell research which aims to find a cure for diseases and illness; research trying to improve infertility treatment and to do something that makes a difference compared to non-donors and possible donors.

**Conclusions:** Components of the TPB successfully differentiated between potential donors, non-donors and possible donors and could therefore be utilised in future recruitment practices. Advertisements and educational leaflets could focus on the medical and social benefits of stem cell research as indicated by the results, in an attempt to recruit potential donors.

## G26

### Psychosocial Factors in the Development of Cardiovascular Disease

Nilufer Kafescioglu, Thomas Volker,  
Cleveland Shields, *Purdue University*

**Purpose:** To review the current data on the relationship between two major psychosocial variables (depression and social support/isolation) and cardiovascular disease (CVD) and some of the proposed mechanisms linking them.

**Background:** CVD is globally the major cause of death for both men and women (Martinez & Bucher, 2007). Conventional risk factors in the development of CVD (e.g. smoking, obesity, sedentary lifestyle) have been well established. Effective pharmacological treatments are developed and prevention strategies are identified to reduce premature deaths from CVD (Orth-Gomer, 2007). However, nearly 50 per cent of cardiac patients have recurrent events even after management of conventional risk factors (Haskell et al., 1994). There is also evidence suggesting that psychosocial variables contribute significantly to the risk of CVD, independent of conventional risk factors, or at a similar rate (Bunker et al., 2003; Frasure-Smith, Lesperance & Talajic, 1995; Orth-Gomer, 2007; Suls & Bunde, 2005). A complete understanding of the underlying mechanisms explaining the link between psychosocial factors and CVD is not clear yet (Welin, Lappas & Wilhelmsen, 2000).

**Methods:** Review of research pertaining to the relationship of CVD with depression and social support/social isolation via MEDLINE, PsycINFO, and Proquest databases. **Conclusions:** Despite some inconsistent results (Nicholson, Kuper & Hemingway, 2006), there is accumulating evidence for depression as a risk for CVD (Frasure-Smith & Lesperance, 2003). Studies with healthy populations at baseline demonstrated an association between higher rates of depressive symptoms and myocardial infarction (Barefoot & Schroll, 1996; Pratt et al., 1996; Schwartz et al., 1998), cardiac mortality

(Penninx et al., 1998), and stroke (Salaycik et al., 2007). Two pathophysiological mechanisms have been suggested to explain the link: (1) Behavioural mechanisms by which depression may contribute to poor health behaviours, difficulty in adopting or maintaining healthy lifestyle, and inadequate use of health care resources (Orth-Gomer et al., 2005); (2) Biological mechanisms including the hyperactivity of hypothalamic-pituitary-adrenocortical, reduced heart rate variability, increased cardiovascular reactivity to stress, increased platelet activation, or increased expression of the metabolic syndrome (Musselman & Evans, 1998). Lack of social support has also been studied widely as a risk factor for CVD. Prospective studies have shown that the quantity and quality of social relationships predict future heart disease mortality (Kaplan et al., 1994; Orth-Gomer, Rosengren & Wilhelmsen, 1993). Having a small network is associated with a two- to three-fold increase in the incidence of coronary artery disease in initially healthy individuals (Rozanski, Blumenthal & Kaplan, 1999). Social isolation has been suggested to affect cardiac mortality and survival through demographic and psychosocial variables such as older age, lower socioeconomic status, greater psychological distress (Brummett et al., 2001); more likelihood to engage in a sedentary lifestyle (Brummett et al., 2005; Orth-Gomer, Rosengren & Wilhelmsen, 1993), and higher incidence for smoking a short time after myocardial infarction (Welin et al., 2000). Overall, evidence suggests a strong relationship between depression, social support and CVD. Further research is needed to understand the impact of multiple psychosocial variables on CVD and the underlying mechanisms explaining their relationship.

## G27

### Uniqueness of educational stakeholders perspectives on the conceptualisation of children's well-being

S. Nic Gabhainn, J. Sixsmith, *National University of Ireland*

**Objectives:** To illuminate and compare conceptualisations of child well-being from the perspectives of children, teachers and parents.

**Design:** A participatory group-based approach was adopted, the technique is an adaptation of the Draw and Write method for data collection from children (MacGregor et al., 1998) and is designed to mirror the Delphi technique (Linstone & Turoff, 1975) for consensus building.

**Methods:** A random sample of children aged 8 to 12 years took 723 photographs representing well-being, while a second set of children grouped the photographs into categories. A third set organised these categories, developing and illustrating through schema the pattern of relationships between categories. This process was repeated by selected parent and teacher groups drawing

## Appendix 7.7 An internet study of factors predicting willingness to donate oocytes.

Purewal, S & van den Akker, O. B. A. (2007). An internet study of factors predicting willingness to donate oocytes. *Health Psychology Review*, 1, (S1), p. 175-176. (Abst).

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nn. Liverpool, United

**Background** Gender differences in self-reported health are well established (e.g. Kolk et al., 2003), i.e. females report more symptoms. However, when Macintyre et al. (1996) analysed data from a national survey in Britain (HALS), a female excess of symptoms was observed over a number of age groups only for malaise related symptoms.

**Method** Four hundred and fifty-six self-selected participants completed an online questionnaire (127 males, 329 females); comprising a newly developed symptom perception questionnaire and a range of psychological measures. Symptoms were classified into physical and stress/fatigue categories, based on responses for individual symptom cause. Structural equations models were then developed to predict the frequency of both 'physical' and 'stress' symptoms, in males and females separately.

**Results** For symptom frequency, significant differences between males and females were revealed only for 'stress' symptoms. Frequency of stress symptoms in males was most strongly predicted by HADS anxiety, current hassles, number of ongoing medical conditions and scores on the Somatosensory Amplification scale. For females, stress symptom frequency was directly predicted by life events, in addition to HADS anxiety and SSAS.

**Conclusion** Females reported a greater frequency of stress symptoms compared to males. The SEM models show that current hassles has the strongest influence on stress symptom frequency in males, and highlight the predominant role of life events in females.

**Keywords:** *Attributions, gender-differences, symptoms*

#### Reference

Kolk, A. M., Hanewald, G. J. F. P., Schagen, S., & Gijbbers van Wijk, C. M. T. (2003). A symptom perception approach to common physical symptoms. *Social Science & Medicine*, 57, 2343–2354.

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#### An internet study of factors predicting willingness to donate oocytes

S. Purewal, O. van den Akker, Aston University, Birmingham, United Kingdom

**Objective** This study examined factors underlying women's decisions to donate their oocytes in order to address the shortage of gamete donors in the UK (HFEA, 1998).

**Method** An online Questionnaire method was used to assess women's attitudes and willingness to donate oocytes using the Theory of Planned Behaviour (TPB).

**Results** The majority of women were White (91.8%) and aged 16 to 59 (mean = 32 years). Of the 128 respondents, 122 (28.5%) were willing to consider donating their oocytes, 159 (37.1%) were unwilling and 147 (34.3%) were unsure. Those who were willing to donate had significantly more positive attitudes towards oocyte donation in general ( $F(2,425) = 31.227, P < 0.001$ ), had more positive attitudes towards the consequences of oocyte donation ( $F(2,425) = 74.744, P < 0.001$ ), reported greater control beliefs in making the decision to donate their oocytes ( $F(2,425) = 16.741, P < 0.0001$ ) and believed they had more support from important others in their lives in making the decision to donate ( $F(2,425) = 62.586, p < 0.0001$ ) than women who were unsure, who were in turn more positive than those not willing to donate.

**Conclusion** The TPB unequivocally differentiated between women willing, uncertain and unwilling to donate their oocytes, which has important consequences for informing recruitment practices. Information provision and advertising could be tailored to incorporate key components of the TPB in an effort to recruit more oocyte donors.



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**Keywords:** *Attitudes, oocyte donation, the theory of planned behaviour*

### Reference

Human Fertilisation and Embryology Authority. (1998). *Consultation on the implementation withdrawal of payments to donors*. HFEA: London

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### Burnout syndrome: the role of work demands, resources and coping

R. Pisanti<sup>1</sup>, M. van der Doet<sup>2</sup>, S. Maes<sup>2</sup>, D. Lazzari<sup>1</sup>, M. Bertini<sup>1</sup>; <sup>1</sup>University of Rome, La Sapienza, Rome, Italy; <sup>2</sup>University of Leiden, Leiden, Netherlands; <sup>3</sup>Hospital, S. Maria, Terni, Italy

**Background** Some studies (e.g. Daniels, 1999) indicate that including coping in empirical tests of the job demands-control-support model enhances its explanatory and predictive power.

**Research Questions** (1) To study the contribution of job dimensions to burnout and psychosomatic complaints in nurses, (2) to investigate to what extent coping strategies account for additional variance in these outcomes, (3) to examine the moderator role of coping strategies and job resources (job control and social support) in the relationship between job demands and outcomes.

**Methods** Data were collected by self report questionnaires including the Leiden Quality of Work Questionnaire for Nurses (LQWQ-N), the Coping Inventory for Stressful Situations Short Version (CISS-SV), the Maslach Burnout Inventory (MBI), and the somatization subscale of the Symptom Check List - 90 (SCL90). The sample consists of 1385 nurses (77% female) with a mean age of 39.1 years (S.D. = 8.4).

**Results** Controlling for sociodemographic variables, the job dimensions accounted for 5-14% of the variance in the study outcomes. Coping strategies accounted for an additional 4-8% of the variance in the outcomes. Job demands and emotion coping strategy were the most consistent predictors. Moderating effects of job resources and coping strategies were not found.

**Conclusion** Job dimensions and individual coping strategies appear to have additional effects on mental health outcomes in nurses.

**Keywords:** *Burnout, coping, nurses*

### Reference

Daniels, K. (1999). Coping and Job Demands-Control-Support Model: An Exploratory Study. *International Journal of Stress Management*, 6, 125-144.

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### What do HADS items measure in patients with myocardial infarction?

J. Witter, M. Johnston, F.F. Smichova, B. Pollard; University of Aberdeen, Aberdeen, United Kingdom

**Background** The Hospital Anxiety and Depression Scale (HADS) is a widely used instrument to screen for psychological distress. However, there is evidence that the HADS item range fails to precisely measure mild to moderate distress levels in cancer patients by using Item Response Theory (IRT) (Smith et al., 2006). Thus, the present study identifies gaps along the underlying continuum of distress in patients with myocardial infarction.

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## Appendix 7.8 Women's reasons for parenthood.

Purewal, S & van den Akker, O. B. A. (2007). Women's reasons for parenthood. *Journal of Reproductive and Infant Psychology*, 25, (3), p. 242-3. (Abst).

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themes emerged from the qualitative data. Mothers reported feeling unsure and anxious about interacting with their infants in the early periods after discharge as they felt unprepared to take their infants home from the hospital. Babies were perceived as sleepy and also unresponsive. Many participants recalled that information about taking infants home had focused on physical care with little guidance about interactions and play. There was a strong feeling that such information would have been helpful. Participants had felt supported in the neonatal unit but health professionals in the community were perceived as lacking expertise in the care of premature infants and unable to deal with parental concerns. The study identified difficulties associated with the transition from neonatal unit to home. There is a clear need for informational support for parents at discharge which focuses on helping them promote their premature infants' social and cognitive development.

### On boys and sex

MARK OXFORD & OLGA VAN DEN AKKER

*Psychology, School of Life & Health Sciences, Aston University, Birmingham, UK*

Boys has the highest teenage pregnancy rate in Europe and numerous interventions and health and social care professionals appear to be baffled by these non-abating trends. It has been suggested that teenage pregnancy is not necessarily bad for the mother or the child, although set against this there is a significant trend in documentation that suggests future problems for both parties can have severe effects on the health and social care systems and society at large. An additional factor which has not received much attention is the fact that the biological father/partner is unlikely to be involved in raising the child. This review investigated the ways in which adolescent males have been receiving effective sex education. The sex education that was examined included all major channels of information for the adolescent of today, such as the education system, parents, peers, and the media. The main aim was to understand if more can be done to reduce adolescent pregnancy rates through emphasizing the financial and emotional costs of parenthood to adolescent males while educating them in the area of sexual behaviour. The literature searched for this review came from electronic databases and books, using a number of keywords -yielding over 843 results. A number of prominent themes were apparent. The most startling was the lack of knowledge about all aspects of sex and the behaviours associated with it, among adolescents, their parents, their colleagues, and unfortunately most of their teachers. Recommendation for further research includes identifying why such ignorance is rife in the UK.

### Women's reasons for parenthood

SATVINDER PUREWAL & OLGA VAN DEN AKKER

*Aston University, Birmingham UK*

**Objectives:** The aims of this study were to determine which factors influence women's reasons for parenthood, in order to elucidate differing needs in post modern (Assisted Reproductive Technology era) populations. The study supplements earlier

qualitative work demonstrating individual differences in British populations. **Method:** The Reasons for Parenthood scale was completed by 252 women online. Data was analysed using SPSS. A number of sociodemographic variables characterised endorsements of different reasons for parenthood. **Results:** Ages ranged between 16 to 68, and most were White. Women who reported a fertility problem ( $n=35$ ) were significantly more likely to rate fulfilment, wanting to please their partner and make a family as relevant reasons for parenthood compared to women who did not report or were not aware of a fertility problem ( $n=185$ ). Younger women were significantly more likely to report wanting a child that is part them and their partner, to give a child a good home, carry on the family name, want a genetically related child and to confirm their femininity as relevant reasons for parenthood and fear that a child would interfere with their career as relevant reasons against parenthood. Women who believed genetic ties between child and parent were important were significantly less likely to report other reasons for parenthood as relevant in their reproductive decision making compared to women who did not report the importance of genetic ties. **Implications:** This study will assist counselors in tailoring specific needs within different populations including the prospect that parenting a genetically related child may be challenged.

#### **Development and preliminary validation of the Attitudes to Twin IVF Pregnancies Scale.**

V. RAI & C. GLAZEBROOK C.

*School of Community Health Sciences, University of Nottingham, UK*

**Aim:** To produce a short, valid and reliable measure of attitudes to twin IVF births for use with health professionals and couples undergoing IVF treatment. **Method:** Nineteen UNESCO delegates, 141 health professionals and 243 pre-clinical and clinical medical students completed the Attitudes to Twin IVF Pregnancies scale (ATIPS). Participants rated 44 items on a 7 point Likert scale from strongly agree to strongly disagree. **Results:** The responses were analysed using item analysis to remove items with poor discriminatory power and low item-total correlations. Two sub-scales emerged with readability  $< 12$  years. Twelve questions formed the risk sub-scale which assessed attitudes to the risks and benefits of a twin birth. The scale had good internal consistency (Cronbach's  $\alpha=0.7$ ). Scores ranged from 17 to 69 (mean=40.3, SD=8.74). Two-way ANOVA found a significant effect of group ( $p<0.001$ ) but not gender. The medical students had less positive attitudes to a twin birth than the health professional group ( $p<0.001$ ) and the conference delegates ( $p=0.004$ ). Eight questions formed the SET scale assessing attitudes to single embryo transfer. The scale had satisfactory internal consistency (Cronbach's  $\alpha=0.53$ ). Scores ranged from 19 to 56 (mean=34, SD=5.3). Two-way ANOVA found a significant effect of group ( $p<0.001$ ) but not gender, with medical students having a less positive attitudes to single embryo transfer than health professionals ( $p<0.001$ ) and conference delegates ( $p=0.02$ ). **Conclusion:** The ATIPS appears to be an acceptable and reliable tool to assess health professionals' attitudes to twin births and multiple embryo transfer.

## Appendix 7.9 A qualitative Study of men and women's reasons for parenthood.

Purewal, S. & van den Akker, O.B.A. (2006) A qualitative Study of men and women's reasons for parenthood. *Journal of Reproductive and Infant Psychology*. 24, (3), p. 274. (*Abst*).

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$M = 11.11 \pm 3.67$ ,  $t(155) = 1.74$ ,  $p = .085$ ). There was a significant relationship between male personal stress and treatment outcome in men with FFI ( $B = -.172 \pm .073$ ;  $p < .05$ ) but not in men with MFI ( $B = .09 \pm .067$ ;  $p = .170$ ). Conclusions: As expected men with MFI perceived their fertility problems as more threatening and stressful than did men with FFI. However, greater stress and threat did not lead to less babies born to couples MFI compared to FFI. The lack of effect may be due to couples with MFI having intracytoplasmic sperm injection (ICSI) treatment bypassing the stress effects on sperm quality. These results suggest that ICSI may be the treatment of choice not only for men with MFI but also for men who report high levels of personal stress.

#### A qualitative study of men's and women's reasons for parenthood

SATVINDEA PUREWAL & OLGA VAN DEN AKKER

*Psychology, School of Life & Health Sciences, Aston University, Birmingham, UK*

There is a vast amount of work which has investigated the effects of infertility on couples, and highlighted the extreme lengths that some will go through to have a child. In comparison there is limited research that has examined people's motivation for parenthood which is likely to be a core theme to all these issues. The aim of this study was therefore to explore people's reasons for and against parenthood using qualitative research methods. In-depth semi-structured interviews were conducted with 16 participants. The 'reasons for parenthood scale', developed by Langridge, Sheeran & Connolly (2005) was used as a topic guide to the interviews. In depth data was analysed using discourse analytic methods. Results demonstrated a number of gender and cultural differences in individual's reasons for and against parenthood. Interestingly, most participants, irrespective of gender, ethnicity and parity rated having a child for biological reasons as low. However despite this, many participants also revealed several conflicting beliefs in their discourses, such as strong desires to have a child that is genetically related to them, having a child that is part of them and their partner, and a need to leave 'something behind'. It is expected that the emerging themes will promote an increased understanding relating to people's reasons for and against parenthood and treatment choices, which is currently lacking in the family literature, and should provide Counsellors with a deeper and more meaningful understanding of the reasons for parenthood and the determining factors, thoughts and feelings that underpin these reasons.

#### Perspectives on early parenting after singleton and multiple births born after treatment for infertility

MAGGIE REDSHAW & CHRIS HICKLEY

*National Perinatal Epidemiology Unit, University of Oxford, UK*

The aim was to investigate the attitudes of parents of single and multiple infants born as a result of infertility treatment. In the Millennium Cohort study a total of 18,553 women who had given birth were interviewed when the infants were nine months of age. Of these, 460 women who had received treatment for infertility (2.6%) participated, 13% (60) of whom gave birth to more than one infant. All the women in the MCS and their partners were asked open-ended questions about what had been most difficult and best about the early months with their baby. The responses of parents of multiples and singletons who had